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**THE**  
**FAMILY DYER**  
**AND**  
**SCOURER.**

ST. JOHN'S COLLEGE

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THE  
**FAMILY DYER**  
AND  
**SCOURER;**

BEING  
A COMPLETE TREATISE

ON  
**The Arts of Dying and Cleaning**  
EVERY ARTICLE OF  
DRESS, BED AND WINDOW FURNITURE, SILKS,  
BONNETS, FEATHERS, &c.

WHETHER MADE OF FLAX, SILK, COTTON, WOOL, OR HAIR;

*Also,*  
CARPETS, COUNTERPANES, AND HEARTH-RUGS.

**ENSURING A SAVING OF EIGHTY PER CENT.**

---

BY WILLIAM TUCKER,  
LATE DYER AND SCOURER IN THE METROPOLIS.

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SECOND EDITION.

**London:**

PRINTED FOR SHERWOOD, NEELY, AND JONES,  
PATERNOSTER-ROW.

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## PREFACE.

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THE Author of this Work has been induced to publish it from a conviction, that the high prices charged by those who are proficient in the useful and entertaining art of Dying, prevent many persons who live at a distance from great towns, from having their clothes dyed, as the payment of the carriage, and the dying together, sometimes amount to more than the value of the article. The different recipes given in this Work are the results of practical experience, and the processes recommended in the same may therefore be depended on. There are many other methods of dying various colours, which would only perplex persons not regularly bred to the business. The object of the Author being to make the art of cleaning and dying their apparel easy to every person, so that they may make their clothes appear as new, at

a trifling expence, he has omitted every thing superfluous. Clothes in a dirty state are frequently thrown by as useless, which, by being dyed or cleaned, may be worn much longer; but besides the saving connected with the methods here recommended, ladies and gentlemen fond of chemical processes will find the art of Dying a pleasing as well as a most useful employment.

As every house affords the necessary apparatus, and every market town the drugs and spirits, by following the simple methods laid down in these pages, it is impossible to fail in attaining the object proposed.

The Author presumes that this Work ought justly to claim the preference to any other hitherto published on the ART OF DYING, as not only the mode of operation, but also the quantity of drugs required for each garment, &c. are exactly specified. Among the many important recipes which it contains, he begs leave to call the attention of the ladies to the preparation of Carthamus, viz. bastard saffron, or safflower, which he has described, and the



manner of its use for dying pinks, bright reds, and rose colour, on silks, cottons, and feathers, and which, when once prepared, is as easy to use, as the pink saucer, producing a much better effect at one-twentieth part of the expence.

The making of Liquid Blue is another object well worth the housewife's attention ; this dyes blues of all shades on silks, woollens and feathers, and in bleaching counterpanes, gives them that beautiful light transparent look which they must have if care is taken at first to clean them properly from the dirt which naturally adheres to the texture of the substance, and remains even in the pores of the cotton. Here, too, I must remind my Readers, that in washing muslin, linen, or calico, they should not use their first water too hot ; but in the last, it is necessary to use it as hot as possible, and also a sufficient quantity of pearl or pot ash ; of the latter a very small portion does to mix with, and to extract the oil or grease remaining in the texture of the cotton, and by this means cotton will preserve and improve its colour.

This little digression, I hope, will operate as a caution indispensably necessary in recipes for dying and scouring, which caution should also be used in cleaning every thing before it is dyed. For further particulars, see the article “Cleaning Silks.”

All the utensils necessary in the art of Dying, are a copper, a frame, a horse, a *tub*, and a *doll*, the latter represented in the wood-cut. The horse is to put your goods upon when they come from the dye, and resembles a carpenter’s stool, about four feet long, and four feet high, supported upon four legs. The goods, when taken from the copper or boiler, may be thrown across this to drain, though any other contrivance may do as well; and instead of a copper boiler, any tin or brass boiler will do, so as there is but room to stir and handle over the goods\*. Many dyers carry on a large trade in one room, and with only one copper of from

\* By *handling over* is meant passing the goods through the hand from end to end, to make the colour communicate equally through the piece.

ten to fifteen gallons. Instead of a frame for finishing silks on, they may be pinned out, as a clear starcher pins out muslin, &c., and ribbons are finished by drawing the iron on the wrong side between pressed paper.

The chymic, or liquid blue, is one of the most useful dyes in practice; as, by adding a proportionate quantity of it to cold water, either spring or river water, it will do its office. After silks are passed through warm water, a process always necessary to make goods take the dye regularly, you have then nothing to do but dip your silk or satin until it has taken the desired shade, adding more liquid blue, as you require the colour to be deeper. It also dyes grey, with the addition of logwood, brazil, or archil, even as deep as a mazarine blue, and from the pale blue azure to the deepest blue; but it will not bear hot water, excepting for dying green. It is useful, also, in many other colours.

The finishing of cloths and cottons must also be noticed. The first of these, the

most difficult, is done by the people called *hot pressers*; and without this finish, woollens would have a very disagreeable appearance. However, persons who live at an inconvenient distance from such tradesmen, may remedy the evil by heating two or three flat irons such as clothes are ironed with: then, putting the cloth between two thick press papers, if they can be got, and by moving the irons backward and forward, so that the impression of weight and heat may be regular and equal over the surface of the cloth. The irons should not be too hot, nor be suffered to remain too long in one place; but one single trial of this process will afford more instruction than it is possible to obtain without it.

For cottons, a calender, or a mangle, will do; and if a mangle is not preferred, simply ironing of them will answer the purpose, care being taken that the iron is not too hot.

Having described the outline of his practice, the Author presumes that much benefit would result from the public encourage-

ment of the Art of Dying. Already the Oak Bark, the Alder Bark, the Welds, and many other dying wares, as Woad, &c. are cultivated in this country, and are equal to any imported from other nations. Nor is it genius for any speculation or improvement that is wanting in this art, but a stimulus.

The Author has already met with many families who are their own Dyers, even without instruction. He therefore hopes that his Work will essentially contribute towards bringing the Art to greater perfection. The utility of dying small Silks, as Gloves, Spencers, Bonnets, Ribbons, &c. cannot be doubted; and the practice is at the same time so entertaining, that the Author ventures to say, when once a lady has perfected one colour, she will not rest satisfied till she has acquired a further knowledge of colours in general. As a proof of these assertions, he also observes, that the dying of one-fifth of all the goods brought to him to dye in the course of his practice had been previously attempted.

Persons of slender income, and others re-



siding at considerable distances from great towns, where proficient dyers are to be found, must inevitably be benefited by this Work: for the basis of the Art being clearly explained, it requires nothing more than the aid of ingenuity to perfect it.

The Author, not pretending to any claims beyond the extent of his own practice and ability, these recipes and instructions, such as they are, he presents to an impartial Public; but, as it may be made an objection, that not every man of business would, like him, expose his trade to the hazard of its ruin, he answers, that he is not of the number of those who entertain this contracted opinion. The world cannot long be kept in darkness; and if there be any business or profession affording larger profits than those of tradesmen in general, this, like every thing else, will eventually find its level. It is undeniable, that few persons would dye their things at home, unless the savings were considerable. And if the dying business has already found, or is rapidly finding, its level, this Work cannot



possibly do it any injury. I now leave the Public to judge of the whole, and proceed to the Recipes, which are arranged in a method the most easy and perspicuous for their application and useful accomplishment.

The Doll, or Maid, represented in the wood-cut, is used for beating blankets, counterpanes, &c. in the tub, in order to clean them. For purchasing this Doll, or getting it made, it is necessary to observe that the upper part, or the shoulders, should measure a circumference of twenty-one inches.

The four feet are made square, and measure seven inches round each foot; is twenty inches long from the fork to the extremity of the feet. From the Fork to the top of the Doll is sixteen inches, making the height of the Doll altogether three feet, or thirty-six inches.

The Tub is two feet and a half in height, the diameter of the top about two feet, and that of the bottom fourteen inches; it has also a false bottom, in order that the under part of the Tub may be level with the floor on which it stands, this being more solid to

beat on; for, if it was not so, the bottom would soon be beaten out.



- A. *The Wall the Peg is put in.*
- B. *The Tub.*
- C. *The Doll.*
- D. *The Blanket being wrung.*
- E. *The short Stick by which the Blanket is wrung.*

THE  
FAMILY  
DYER AND SCOURER.

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CHAP. I.

DIRECTIONS FOR CLEANING AND SCOURING  
LADIES AND GENTLEMENS CLOTHES, LACES,  
SILKS, COTTONS, AND WOOLLENS ; GOWNS,  
BED-FURNITURE, &c. &c.

*To clean White Lace Veils.*

**MAKE** a solution of white soap, in a clean saucepan ; put in your veil, and let it boil gently a quarter of an hour, take it out into a clean bason with some warm water and soap, and keep gently squeezing it till it is thoroughly clean, then rinse it from the soap, and have ready a pan of clean cold water, in which put a drop of chymic or liquid blue, rinse the veil in this liquid, then take a tea spoonful of starch and pour boiling water upon it, run the veil through this, and clear it well by clapping it between the hands, then

frame it or pin it out, taking care to keep the edges straight and even.

*To clean Black Lace Veils.*

These are cleaned by passing them through a warm liquor of bullock's gall and water: they must then be rinsed in cold water; they must next be cleaned for stiffening, and finished as follows.

Take a small piece of glue, about the size of a bean, pour boiling water upon it, which will dissolve it, and when dissolved pass the veil through it, then clap it between your hands and frame it as described in the preceding receipt.

*A Method of cleaning White Satin, Silks, &c.*

Make a solution of the finest hard curd soap, and when at a hand heat, handle your silks through this, drawing them through the hand if they are such as will bear it. If any particular spots appear, which may easily be discerned by holding the satin up to the light, such spots must be dipped in the liquor, and gently rubbed between the hand. Sometimes two or three liquors are required in this way. The things must then be rinsed in lukewarm water, then dried and

finished by being pinned out, and the flossy or bright side well brushed with a clean clothes brush, the way of the nap. The more it is brushed, the more beautiful it will appear. If you are near a calenderer, your articles may be callendered, if not you may finish them by dipping a sponge into a little size, made by boiling isinglass in water, and rubbing the wrong side. Your things must then be pinned out a second time, and again brushed and dried near a fire, or in a warm room. Silks are done the same way, but not brushed. If the silks are for dying, instead of passing them through a solution of soap and water, they must be boiled off; but if the silks are very stout, the water must only be of heat sufficient to extract the filth. Being then rinsed in warm water, they are in a proper state for receiving the dye.

*Another Method for cleaning White Satins.*

French chalk must be strewed over them, and then well brushed off with a hard brush. Should the satin not be sufficiently cleaned by the first dusting, it may be done a second time, and it will both clean and beautify the satin. The more it is brushed the better.



*For cleaning coloured Silks of all Kinds, supposing an Article of this Kind be a common sized Shawl.*

Take one pennyworth of soft soap, and put into a vessel of a convenient size to wash a shawl or scarf in, add to it a sufficient quantity of boiling water, keep beating and stirring it till it be dissolved, and till a strong lather rises on the top of the water, and when at a hand heat, put in your shawl; then if the texture is strong enough to bear it, it may be rubbed as easily as one would wash a linen garment, rinse it out in lukewarm water, and if it is a false colour it will be easily seen, by the colour discharging into the suds. Care therefore must be taken to go through the process quickly, having ready in another pan (what the dyer's journeymen call "a drop of sharp") which is a small quantity of oil of vitriol sufficient to give the water a slight acidulous or sour taste; but it must not be too strong, just a sufficient quantity to deaden what salts may be in the water, hard spring water therefore is best; this does for all bright yellows, crimsons, maroon and scarlets, but for orange colours, fawns, browns, or shade from these colours, it will not be necessary to use any acid. If you are cleaning a bright scarlet and the colour should

sadden or grow deeper or duller, it will be necessary instead of vitriol to use the solution of tin. If the garment should be very dirty, a second or even a third liquor is required, unless it should discharge or come out too much in the liquor; but whether false or permanent colours, this process should be gone through quickly. As most bright colours, such as reds, yellows, pinks, and the shades from them, are furnished by spirits of a strong acidulous quality, therefore, though of all soaps the soft soap is least impregnated with salts, yet it contains a sufficient quantity to deaden and partly to destroy the acid. The process being too long, it therefore causes the salt to enter the pores of the substance, and attacks the dye which is within the pores, by which means the colour often fades, and sometimes is wholly discharged. To prevent this evil, as soon as the silk comes from the acidulated water, it should be gently squeezed (not wrung) and a coarse sheet should be spread on a table, and the shawl should be put upon it and rolled in the sheet and wrung, which will prevent the colours from running; and this is what the dyers call *sheeting* silks. The shawl, &c. is then taken from the sheet and hung up in a warm room to dry, and is finished by being callendered or mangled, without any further trouble. Some dyers press them, which is done in a cold press (or one whose irons are not hot).



“ All kinds of silk shawls, fancy and painted, and foreign made silks are done this way.” But when you have proof of the solidity of the colour, which may be known, besides the aforementioned proofs, by its having worn well, if any spots of a yellow or black cast should happen to be on maroon, red or crimson, this method of cleaning will either extract or cover it. As for pinks, rose colours, and shades from them, such as flesh colours, &c. instead of vitriol or solution of tin, a small quantity of lemon juice, or solution of white tartar, or even vinegar, should be added to the finishing liquor.

*For cleaning and restoring Blues, Purples, and Shades from them, such as Mazarine, Prince's Garter, Royal and Navy Blues.*

These should be cleaned by dissolving hard white curd soap as before described, adding to it a small quantity of the best American pearl ash; and if the colours are faded almost to a red, this will restore them. You must add more or less pearl ash as the colour may require. Wash the silks in this liquor as you would a linen garment, then, instead of wringing, gently squeeze, and sheet them. When dry, finish them with fine gum water, or isinglass, dissolved by boiling. A sponge must be dipped in this, and squeezed

almost dry, and then rubbed regularly all over the wrong side; and lastly, they should either be framed or pinned out. A small bit of pearl ash should be added to the isinglass or gum water, which will preserve its brightness.

N. B. These blues of all shades are dyed with archil, and afterwards dipped in a vat; therefore cleaning with pearl ash restores the colour. There are some blues on silk, of a very light shade, that are dyed with chymic blue, which will not clean. These may be distinguished by their not being of a red cast.

*Olive Green.*—There is a kind of dirty looking green that may be cleaned much in the same manner, only no acid must be used; or great care must be taken to use no more than a sufficiency of it to harden the water. But if the water used is of a hard nature, no acid will be wanted; and a small quantity of verdigris dissolved in water, or a drop or two of what is termed a solution of copper, mixed with water, will revive the colour again.

#### *Of cleaning Black Silk.*

If this is a slip, unpick the seams; take one piece at a time and put it on a table, then take a pennyworth of bullock's galls, and boiling water sufficient to make it pretty warm, dip a clean

sponge in the gall liquor, and washing your sponge in a pan of warm water, after dipping it into the liquor, rub the silk well on both sides, squeeze it well out, and proceed as before. Then hang up this piece of silk, and clean the others in the like manner. When the whole are done, immerse them all together in a pan of spring water, to wash off the dirt which the gall has brought upon the surface of the silk; change your rinsing waters till they are perfectly clean, and after washing, dry your silks in the air, and pin them out on a table, &c. first dipping a sponge in glue-water, and rubbing it on the wrong side of the silk. Dry it near the fire, and it will be as new.

*For dipping Black Silks when they appear Rusty, or the Colour looks faded, for a Silk Dress.*

For a silk dress, your own discretion must be used, whether the silk can be rouzed, or whether it requires to be redipped (redyed). Should it require dipping, this is done as follows; for a gown, boil two ounces of logwood, when boiled half an hour put in your silk, and simmer it half an hour, then take it out, and add a piece of blue vitriol as big as a pea, and a piece of green copperas as big as the half of a horse bean; when these are dissolved, cool down the copper with cold water, and put in your

silk, and simmer half an hour, handling them over with a stick; wash and dry in the air, and finish as above. If only wanting to be rouzed, pass it through spring water, in which is half a tea spoonful of oil of vitriol. Handle in this five minutes, then rinse in cold water, and finish as above.

*Of Silks that are stained by corrosive or sharp Liquors.*

We often find that lemon juice, vinegar, vitriol, and other sharp corrosives, stain dyed garments. Sometimes by adding a little pearl ash to a soap lather, and passing the silks through these, the faded colour will be restored.—Pearl ash and warm water will sometimes do alone, but it is the most efficacious method to use the soap lather and pearl ash together.

*To clean Silk Stockings.*

Wash them in soap and water; and then either into a tin or copper boiler cut an ounce of white curd soap into thin slices, and putting the stockings in, boil them gently ten minutes; then take them out and rinse in cold water. If they are to be of the blue cast, take one drop of liquid blue, put it into a pan of cold spring water, run the stockings



through this a minute or two, and dry them in the air. If they are to be of a pink cast, drop one or two drops of the saturated pink dye into a pan of cold water, and run them through this instead of the chymic. If they are designed to have a flesh-colour, a little rose pink is used in a thin soap-liquor. All silk stockings, black excepted, are to be rubbed with a clean flannel, and sent to be callendered or mangled.

*The Mode of extracting Grease Spots from Silk, coloured Muslin, &c.*

Take French chalk, finely scraped, and put it on the grease-spot, holding it near the fire, or over a warm iron reversed, or on a water-plate in which is boiling water. This will cause the grease to melt, and the French chalk will absorb it, and it may then be brushed or rubbed off. If any grease remains, proceed as before until it is all extracted. The French chalk is a fine soluble powder, and of a dry absorbent quality acting upon silks as fuller's earth does upon woollen.

*Method of Taking out the Spots of Paint, or other  
Solid Substances, from Cloth, Silks, &c.*

Supposing a small quantity of paint had dropped on a coat, a pen should be dipped in spirits of turpentine, and its contents should be dropped on the paint spot, in a quantity sufficient to discharge the oil and gluten that is mixed with the paint. Then let it rest several hours, that it may penetrate and suck up the oil: and when it has done this, take the cloth between your hands, and rub it; the paint spot will then crumble away like dried earth. The turpentine will by no means injure either the cloth or colour.

*To prevent Scarlet Cloth from being stained  
Black.*

As all corrosive, vitriolic, or salt liquors stain this colour, as the dirt of the streets, the droppings of houses, &c. and as these generally contain a vitriolic property, especially in large cities, when any spots of this nature appear upon your return home, wash them out in a little hard spring water, in which a dust of tartar has been thrown, and it will extract the filth, and leave no manner of stain.

*A Method of cleaning Chintz Bed and Window Furniture, so as to preserve the Gloss and Beauty.*

This will generally answer where the cloth is not in a very dirty state.—Take two pounds of rice, boil it in two gallons of water till soft; put the whole into a tub; and when your liquor is at a hand heat, put in your chintz, and use the rice as you would soap. Then take the same quantity of rice and water; but when boiled, strain the rice from the water. Wash the chintz in this till it is quite clean: afterwards rinse it in the water the rice was boiled in, smooth it out with the hands, and hang it up to dry; then rub it with a sleeking stone, or glaze it, and it is finished.

The dyers clean chintz generally by washing it, or rather beating it with the doll in a tub of warm soap lather, at a hand heat; and at last either take flour or starch, and make it of the consistence of oil; and then they beat their goods up in this, open it well that it may be smooth, dry in the air, and glaze it.—Should the colour fade in washing, (that is, the red and green), it will be necessary to give the goods a drop or two of oil of vitriol in cold water after rinsing: this stays the colours.



*For scouring thick Cotton; as Counterpanes,  
Quilts, &c.*

Cut a pound of mottled soap into thin slices; put it into a pan with a quarter of an ounce of pot ash, and one ounce of pearl ash; then pour a pail of boiling water on it: let it stand till it is quite dissolved; then pour hot and cold water into your scouring tub, with a bowl of your solution of soap. Put in your counterpane, and beat it well out with a doll, often turning the counterpane over in the tub. When this is done, wring it across a gallows or a hook, which is done by turning the two opposite ends round each other, and putting a small clean stick between them. By this method you may wring it as dry as possible, the harder without injuring it the better. Having given it this first liquor, you may put in some old cottons or woollens, that the liquor may not be thrown away, and then give your counterpane a second liquor as before. Wring it out again, and rinse in clean cold water; then pour a sufficient quantity of boiling water into your tub, with a small quantity of the solution of soap, so that you will reduce it to a very thin lather. Put three tea spoonfuls of liquid blue into the tub where your goods were taken from, and the acid of the liquid blue and the

alkali of the pearl ash and the soap lye will cause a slight fermentation or efflorescence: stir this thin blue liquor with a stick, and put in your counterpane: beat it out with the doll about five minutes, which will colour the counterpane of a fine azure blue, of the lightest shade; but as it dries in the wind, the blue mostly goes off, and leaves a brilliant white.

N. B. In some cases where the cottons are very brown and bad, it is necessary, instead of the last of these three liquors being poured into the tub, that it should be thrown into the copper, and the cottons entered and boiled an hour. When taken out, return them into the tub with some cold water, and add the before mentioned quantity of chymic, otherways called, liquid blue; and dry the articles in the air.

*For cleaning thin Cottons, as Gowns, &c.*

Instead of rubbing the soap on the cotton, as is the custom with laundresses, make a solution of soap, and put in your goods; then wash them as a washerwoman would. The benefit resulting from this difference of procedure is, the cottons are cleaned all over in an equal degree, which we know is not the case when the soap is rubbed on the body of the cotton; as then we often find large

quantities of solid soap in the pores of the cotton, which prevents such parts from receiving the dye, or appearing clear: whereas the solution, if made as described for quilts, &c. will extract all impurities, and do it evenly. It often happens in coloured cottons, where greens, reds, &c. are used, that the colour will run; then some acid as lemon juice, vinegar, vitriol, or any other, should be infused into the rinsing water, to preserve the colours, especially in Scotch plaids.

*For cleaning Scarlet Cloth.*

It often happens that ladies' pelisses, mantles, habits, &c. are dyed of this colour; therefore they should be taken to pieces, that they may be pressed; and so should all garments that require finishing, (except gentlemen's clothes, and even those should be taken to pieces when they are worn, that they may be turned).

There are various modes of cleaning scarlet, each dyer considering his own the best way; but the way in which I have best succeeded is the only one in which a dirty scarlet cloth can be cleaned. For a woman's mantle, dissolve half a pound of the best white curd soap; but as the quantity of soap depends on the state the garment is in, frequently two ounces will do. I have used a whole

pound for such a sized garment. If any black looking spots appear, rub your dry soap on them; in the mean while have your other soap sliced and dissolving. When the mantle is spotted all over with the soap, take hot water and a brush, and brush it off. If it is very filthy, some part of the stains will still remain: in that case you must immerse or dip the whole garment into your solution at rather under a hand heat, and rub lustily such parts as are most stained. Have then ready prepared a second solution of white soap, as at first, only somewhat hotter; wring it strongly from the first soap liquor, and you will find soon after you get it in this second liquor that the colour will begin to fly, that is, it will spend itself in the liquor. This must be your signal to dispatch it hastily; and if this second liquor does not effectually cleanse your article, you will know that the garment has been too hard worn, and requires what is called dipping, or re-dying: as soon, however, as the colour begins to give, wring it out, and immerse it in a pan or pail of warm water, to extract what soap remains in it: wring it out of this, and immerse it in a pan of cold spring water, in which a table spoonful of solution of tin has been previously mixed. This solution generally turns the water of a milky white. Let your garment remain in it, now and then handling it, ten minutes, hang it to dry in the shade, which is best, or a



warm room, if the colour is much worn; if not, hang it any where, and let it be cold pressed.

I have cleaned some hundreds of these mantles, &c. and many of them looked equal to new, and some which had been overloaded with the dye, looked better than when new.

But if these things are not much soiled, which generally happens if worn in country places, or if the colour incline to what is termed a *fire colour scarlet*, which is more tenacious, having less body of cochineal, and more spirits, and is often falsified with young fustic, turmerick, &c. the goods will require milder means to extract the dirt, without prejudice to the colour, which is done as follows :

Take a quarter of a peck of wheaten bran, pour boiling water on it in a hair sieve; and when this bran water comes down to a hand heat, immerse your cloth, and rub it well now and then; and, holding it up to the light, look through it, to see where the spots are. In the mean while prepare a second liquor like as the former, adding to it nearly a quarter of an ounce of white or crude tartar. Wring out from the first bran liquor, and put in this; and if the colour is not saddened, which may be known by wringing one end of it tight, and blowing strongly on it, which will shew the colour it will be of when dry; it is finished; but should it be saddened, or darkened, a clean liquor must be made of cold spring water, in which add a drop or

two of the solution of tin; let it remain in this liquor ten minutes, then wring it, and hang to dry.

The mode of dipping scarlet cloth, after it has been thoroughly cleaned with soap, and rinsed in warm water, is as follows:

When the spring water in your copper (or boiler, or tin kettle, or whatever your convenience may be) boils, put in a quarter of a pound of young fustic, or what is known better by the name of zant, and a dram of pounded and sifted cochineal, and an equal quantity of white cream of crude tartar and cochineal; then, when this has boiled five or six minutes, cool down your copper by adding a pint or two of cold spring water, and a table spoonful of the solution of tin; then stir it, put in your cloth, and boil it for ten minutes; when dry, send it to be cold pressed. A cheaper method, but not so good as the foregoing, which I never knew to fail, is as follows: heat your copper to a hand heat; add two ounces of the best crop madder, and a like quantity of turmeric, if required; but for a deep red, turmeric must be omitted. When these have simmered ten minutes, and the madder begins to give out its dye, then put in your goods, and simmer them ten minutes, or longer, as required. The Irish dyers, instead of the solution of tin, use a few drops of the oil of vitriol, so as to make the liquor taste tart; handle

the goods through this for two or three minutes, then take them out, rinse them in cold spring water, and hang them up to dry. Care must be taken, when madder is used for reds, not to let the water boil, as this drug, as well as the carthamus, affords two colours, the one red, the other brown, and madder, on being boiled, gives out the brown. This method will not answer for fire-coloured scarlet, but will do for bright coloured reds, when the colour requires to be saddened.

*To raise the Nap on Cloth.*

When woollens are worn thread-bare, (generally the case in the elbows, cuffs, sleeves, &c. of men's coats), to remedy this the coat, &c. must be soaked in cold water for half an hour, then taken out of the water, and put on a board, and the thread-bare parts of the cloth rubbed with a half-worn hatters' card, filled with flocks, or with a prickly thistle, until a sufficient nap is raised. When this is done, hang your coat, &c. up to dry, and with a hard brush lay the nap the right way. This is the method which is pursued by the dealers in old clothes.



*To revive the faded Colour of Black Cloth.*

If a coat, clean it well as described in scouring blues, blacks, browns, &c. then boil from two to four ounces of logwood in your copper or boiler half an hour; then dip your coat in warm water, and squeeze it as dry as you can, and put it into the copper, and boil half an hour. Take it out, and add a piece of copperas about the size of a horse bean; boil it another half hour, then draw it, and hang it in the air for an hour or two; take it down, rinse it in two or three cold waters, dry it, and let it be well brushed, and with a soft brush, over which a drop or two of oil of olives has been rubbed: stroke your coat regularly over. The whole expence of this process (the firing excepted) will not exceed three halfpence. If any part of the coat, &c. should be worn thread-bare, the nap must be raised with a prickly thistle, &c. and the coat will look as new. Some dyers use old black liquor instead of logwood and copperas.

*For dry cleaning Clothes of any Colour.*

First examining where the spots of grease are, dip your brush in warm gall and strike over the

greasy places, when the grease will immediately disappear, rinse it off in cold water ; dry by the fire, then take sand, such as is bought at the oil shops, and laying your coat flat on a table, strew this sand over it, and knocking your brush on it, beat the sand into the cloth, the sand should be a little damp. Then brush it out with a hard brush, and it will bring out all the filth with it. This does also for coach linings and gentlemen's clothes, &c. In the summer time when the dust gets into clothes, &c. after they have been well shook and brushed again, pour a drop or two of the oil of olives into the palm of your hand, rub this over your soft brush, strike your coat over with it, and this will brighten the colour if either blue, black, or green.

*For sulphuring Wool, Silks, Straw Bonnets, &c.*

Put into a chaffing dish some lighted charcoal, put this chaffing dish into a small close room, without a chimney, or into a closet or large box ; then pound an ounce or two of brimstone, and strew it on the hot coals. Hang up the articles you would have bleached, make your door fast, and let them hang three hours or all night, if you have time. This is what is called dry bleaching woollens ; and all fine coloured woollens

should be sulphured in this way previously to their being dyed. Straw bonnets are likewise bleached in the same manner.

*Remarks on scouring Woollens.*

It often happens that woollens are dyed with the false dye, which is generally more brilliant than the fast or good dye. When this happens to be the case, especially in very fine colours, as purples, greens, maroons, &c. other means must be used, as instead of spotting the cloths with soap in the solid, a thin solution of soap should be made, and the brush dipped in and then applied to the dirty places; and in case it is a false green, after it has been proceeded with, as all light colours are, a pan should be filled half full of spring water, and after the coat has been previously well rinsed in two waters at least, a tea spoonful or rather more of the best oil of vitriol should be poured into this vessel of spring water, and the coat put in and handled a minute or two, which will revive the colours if a chymic green; and if not, it will not hurt any fast green.

*On scouring undyed Woollens.*

This process, as practised by dyers, is so simple, that any housewife may go through it.

Supposing the article to be scoured is one of the largest sized blankets, in a very dirty state; cut into thin slices half a pound of the best yellow soap, then pour such a quantity of boiling river water on it as will effectually dissolve the soap, and make it of the consistence of oil in thickness. This is what is called solution of soap; enough of this being made to scour what flannels you may have to clean, you then proceed to pour into your scouring tub a sufficient quantity of hot and cold water to cover your goods about two inches; and the heat must be such as you may bear your hand in, previously putting a lump of the best American pearl ashes into your tub, as big as a small walnut, and some solution of soap, about a third of the quantity prepared; then put in your goods, and with your doll beat them out, until no head or lather raises on the top of the water; you must then take the blanket by one corner, and hang it up, letting the two ends or sides meet when hung down together. Then turn those two ends in round each other; put a short stick between them, and by this means you can wring it quite tight, (and if you have more than one to do) you may add a little more pearl ash to the water



that the blankets came from, and add more hot water, beating them in like manner. This will tend to soften the dirt in them, and prevent any of the ingredients from being lost. This dirty water is to be emptied away, and a second liquor prepared as the former; but if the blanket is pretty well cleaned of its filth, you need add no pearl ash in this second liquor, but let the water be hotter than the first, and then proceed as before. This second liquor being spent, put it into the tub with the rest of your dirty goods. A third and finishing liquor is prepared by adding the remainder of your solution of soap, and a small bit of pearl ash and boiling water, then put your blanket into the liquor, give it a quick beat out in this thin liquor, and immediately wring it very tight, hang it to dry, and it will be as white as wool can be made.

*For scouring Black, Blue, and dark Brown Wool-  
lens, as broad and narrow Cloths.*

Supposing the article to be cleaned is a man's coat, first dry about two ounces of Fuller's earth by the fire, then pour a sufficient quantity of boiling water on it to dissolve it to the consistence of molasses or honey; take a sufficient quantity of this on the top of your three fingers, and plaster thinly over such spots of grease as

may be on the coat, particularly remarking the cuffs, collar, the pocket holes, and under the arms, &c. This done, if you have time, dry it by the fire or in the sun; prepare a pennyworth of bullock's gall, mix with it half a pint of stale urine; add to this, if required, a little boiling water, to make the quantity of alkaline liquor sufficient for your purpose, such as chamber lye, pearl ash, pot-ash liquor, or bullock's gall. You must take care not to weaken this too much with water; but instead of it, add as much as you like of the hot chamber lye. Dip your hard brush in this liquor, and brushing the spotted places in your coat, you will find it produce a white froth, like soap lather. After this you must dip the coat in a bucket of cold water, spring water is best, to wash off the filth and bad smell. Then take a walking stick, and put through the two arm holes, and putting a string round the middle of the stick, hang the coat to dry. When it is nearly dry, take your brush and lay the nap the right way of the cloth, and when quite dry, pour a small drop of oil of olives, or sweet oil, in your hand, and pass it over the brush, with which strike your coat; and, if too much oil is not used, it will give it the appearance of new.



*For scouring Grey, Drab Colours, Fawns, Maroons, and all other coloured Woollens.*

Supposing the garment to be a coat, take some of the best yellow soap, and cutting it into thin slices, pour upon it a sufficient quantity of water just to moisten it. Then roll it into a ball, and rub all the greasy and dirty spots of the coat with it. Let it dry a little, and then taking warm water, dip your brush in it, and stroke off the soap; if not quite clean, proceed as before, and use your water a little hotter; rinse at least three times in two or three buckets or pans of water; the first of these blood-warm, or even hotter. Hang to dry as before directed.

*For scouring party-coloured Woollen, as Carpets, Hearth-rugs, &c.*

It is customary with the scouring trade in this metropolis to have a large scouring board; the narrowest part of the carpet is first pulled on the table, and according to the colours that are in the carpet, either gall or soap must be used, and sometimes both. Carpets generally are drawn across a table, or scouring board, and a piece of soap is rubbed on every spot of grease or dirt. If the soap is very hard, it is customary to have a bowl of hot water by your side to dip it into. The carpet must first be well beat

before brought to the scouring board; after all the spots have been soaped, take the part which was first soaped, upon or across the table. Then take a hard brush dipped in boiling water, and holding the brush by the middle, with the arm extended in front of the body, so as to have your full strength, rub the spots until the dirt is extracted. This is to be continued all over the carpet till the dirt is out. If the carpet should be very dirty, a solution of soap, as for blankets, must be put into your scouring tub, with hot water; then enter your carpet, and beat it out with the doll, then rinse it in as many different clean waters as it may require. In the last rinsing water put a table spoonful of the oil of vitriol, it will brighten the colours, and make the carpet look clear, especially where reds and greens are in it.

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## CHAP. II.

THE NAMES, PRICES, AND METHODS OF PREPARING VARIOUS DYES.—METHODS OF DISCHARGING AND RE-DYING.

### *On Colours.*

THE five primitive colours are blue, red, yellow, black, and brown; each of these separately will afford an infinite number of colours, or rather

shades, and by the combination of two or more of them, all the colours in nature are formed.

*On the Mixture of the five primitive Colours, taken by three and three to produce the various compound Colours.*

From blue, red and yellow, the red olives, and greenish greys are made. From blue, red and brown, olives are made from the lightest to the darkest shades, and by giving a greater shade of red, the slated and lavender greys are made. From blue, red, and black, greys of all shades are made, such as sage, pigeon, slate, and lead greys. The king's or prince's colour is duller than usual; this mixture produces a variety of hues, or colours almost to infinity. From yellow, blue and brown are made the goose dung, and olives of all kinds. From brown, blue, and black are produced the brown olives, and their shades. From the red, yellow, and brown, are derived the orange, the gold colour, feuille-mort, or faded leaf, dead carnations, cinnamon, fawn, and tobacco, by using three, or two of the colours as required. From yellow, red, and black, browns of every shade are made. From blue and yellow, greens of all shades. From red and blue, purples of all kinds are formed.

*Names of Dying Drugs, and the current Prices,  
averaged for seven Years together.*

From these an accurate idea may be formed as to the expence of dying each garment, which will not exceed one eighth of the charge made by a dyer. Thus it will be seen that eight garments may be dyed and re-dyed at the expence charged by the trade for a single one. A dyer, for instance, charges from three shillings and sixpence to five shillings and sixpence for cleaning a lady's pelisse; whereas, done at home, even allowing you pay for finishing, that is pressing, the charge will not exceed sixpence; namely, twopence for bullock's gall, or if of a light colour, a quarter of a pound of soap, two pence, and pressing as before. The names of the dying materials are alum, argil, tartar, verdigris, blue vitriol, rock alum, American and oak bark, fenugreek, logwood, old and young fustic, Brazil wood, braziletto, camwood, barwood, and other red woods, peachwood, shumac, dyer's galls, welds or wolds, madder of three or four sorts, safflower, savory, green wood, arnatta, turmeric, archil, cudbear. Brazil wood is about one shilling and sixpence per pound, shumac fivepence, other woods from two-pence to three-pence per pound, safflower one shilling and sixpence to two shillings, cudbear two shillings, and archil ten-pence.



## ON THE EFFECTS OF VARIOUS SALTS OR MORDANTS ON COLOURS.

### *Remarks on the Dye of Madder.*

For a madder red on woollens, the best quantity of madder is one half the weight of the woollens that are to be dyed; the best proportion of salts to use is five parts of alum and one of red tartar for sixteen parts of the stuff.

A variation in the proportions of the salts, wholly alters the colour that the madder naturally gives. If the alum is lessened, and the tartar increased, the dye proves a red cinnamon. If the alum be entirely omitted, the red wholly disappears, and a durable tawny cinnamon is produced.

If woollens are boiled in weak pearl ash and water, the greater part of the colour is destroyed. A solution of soap discharges part of the colour, and leaves the remaining more beautiful.

Volatile alkalies heighten the red colour of the madder, but they make the dye fugitive.

### *Remarks on Logwood Dye.*

Volatile alkaline salts or spirits incline this to purple; the vegetable and nitrous acids render it pale; the vitriolic and marine acids deepen it.



*Lime Water.*

Lime water in dying browns or black, especially browns, is found to be a good corrective, as also an alterative, when the goods are not come to the shade required; but practice alone can shew its utility; it answers for either woollens, silks, or cottons.

ON FAST AND FUGITIVE COLOURS, AND ON  
SALTS OR MORDANTS FOR PREPARATION.

*The Cause why some Colours are more holding  
than others.*

Browns and blues, or shades from them, require no preparation, but reds and yellows, either of silk, cotton, or woollens, require a preparation to make them receive the dye, and hold it fast when it has received it. The alum and tartar, boiled together, when cold, form a mastic, within the pores of the substance, that serves to retain the dye and reflect the colour in a manner transparently. Almost all browns are deemed fast and holding colours, without any preparation, the dying wares containing in themselves a sufficient degree of astringent quality to retain their own colours. Many reds also are equally holding, but none more so than those made with madder on woollens prepared with alum and

tartar. A very fast red is also made with Brazil wood, by boiling the woollen in alum and tartar, according to the receipt laid down in this treatise, and suffering the cloth to remain several days in a bag kept moist with the preparation liquor. The cause of the solidity of the colour from Brazil wood, dyed after this method, results from the alum and tartar masticating itself within the pores of the wool in quite a solid state. Then such parts as can be again dissolved (for such parts there are) by being put into the boiling dye instantly seize the colouring substance, and the pure dye water being of a more soluble quality, and of a finer nature than the gross particles of the alum and tartar, the stain of the dye penetrates through the masticated alum and tartar, and of course becomes holding and transparent. There is not a drug in the whole art of dying, but may be made a permanent dye, by finding out a salt, or solution of some metal, that when once dissolved by spirits, or by boiling water, will not again calcine in the air, nor be dissolved by moisture. Such are alum and tartar, the solution of tin, &c. But these salts and solutions do not answer with all ingredients that are used in dying. This proves the dying art is by no means yet brought to perfection; yellow is also one of the most holding colours; for, in the first instance, many of the drugs, woods, barks, roots, &c. that dye yellow, contain in themselves qualities that

are of a nature to cement together, possibly by a kind of glutinous substance which those herbs or drugs possess. Besides this they are generally prepared to receive the dye by alum and tartar, and all drugs that are used in dying yellow, are made perfectly solid by these preparations. Nevertheless some of them are sufficiently permanent or holding without a preparation.

### *Of Black.*

Blacks require no preparation, but it is necessary to body them, that is, to fill up the pores of the wool, silk, or any other substance; on being put into hot water it is dilated, and the astringent qualities of the dying wares adhere to it, and fill up the little cavities in its pores. The articles that are generally used for this purpose are dyer's galls, sandal, shumac, fustic, alder bark, oak-sawdust, &c. When the cloth, or other thing, is filled with these substances, it is then in a prepared state to take the staining or dye liquor, which is generally logwood and copperas, with alder bark, or shumac, and sometimes blue vitriol. The copperas or vitriol, joined with the vegetable astringents, form a mastic that withstands both sun and rain (which are the natural proof of dyes), but will not stand spirits or oil of vitriol without totally changing the colour from a black to a red brown.

*Of Blue.*

Blue is also reckoned a fast colour, when dyed either by indigo or woad in a prepared vat, this vat containing the necessary properties to seize and cement the colouring atoms. The blue, with oil of vitriol alone, never can be ranked among the fast dyes; but blues, obtained from logwood, may be made sufficiently holding to be adopted almost for general use: though the method now practised of simply boiling the logwood with Roman vitriol, is easily acted upon by wind, rain, and sun. Goods for blue require no other preparation but dipping them in warm water previous to their being dipped in a vat. The reason this colour requires no preparation, is not because the prepared vegetables contain sufficient astriction to hold its own colour, but because the whole liquor of the vat, of whatever kind it may be, is impregnated with those salts that are of a proper nature to seize on the cloth, and fix itself in the pores of the substances, drawing at the same time the colouring atoms along with it; and then, on its being exposed to the air, they are consolidated together, and as the dye and the preparing salts enter at one and the same time, it follows that the colour is not only holding but regular. The same thing happens with black and other shades from this colour.



*For making various Articles used in Dying.*

Chymic for light blues, and greens on silk or woollen, and for cleaning and whitening cottons, is made by the following process :

Take one pound of the best oil of vitriol, which pour upon one ounce of the best Spanish flora indigo, well pounded and sifted, add to this, after it has been well stirred, a small lump of common pearl ash as big as a pea, or from that to the size of two peas, this will immediately raise a great fermentation, and cause the indigo to dissolve in minuter and finer particles than otherwise. As soon as this fermentation ceases, put it in a bottle tightly corked, and it may be used the next day. Observe, if more than the quantity prescribed of pearl ash should be used, it will deaden and sully the colour.

Chymic for green, as above for blue, only adding one fourth more of the oil of vitriol.

If the chymic is to be used for woollen, East India indigo will answer the purpose even better than Spanish indigo, and at one quarter of the price, but the oil of vitriol is good for both.

*For making the Solution of Tin, in aqua regia.*

Take eight ounces of clearly filtered river water, and eight ounces of the best double aqua fortis, mix these two liquids together; then add half an ounce



of white sal ammoniac, by degrees, taking care that one piece dissolves before you add a second, and lastly, two drachms of saltpetre; whilst this is dissolving take one ounce of refined block tin, it is to be had in small bars about the size of your little finger; put this ounce of tin into a fire-pan or any iron crock, set it over the fire, and when it is melted, hold it four or five feet above your vessel, and drop it into a pan or tub of water, by which means it will fall to pieces.

Take this granulated tin, and put it into your aqua regia, a small piece at a time, and when that which you put in last is dissolved, add more, and so continue till the whole is consumed; keep it always tightly corked for use. When finished it will be of a beautiful yellow, though if it should be white, like water, it will not be the worse for use; keep it in a cool place, as heat turns it milky, and spoils it.

*For making Muriatic or Bleaching Acid.*

Take of sea salt	-	-	8 parts
Of sulphuric acid	-	-	5 ditto
Black oxide of manganese	-	-	3 ditto
Water	-	-	4 ditto

The manganese is to be had of Knight's, in Foster Lane, Cheapside, London, and most parts of the country, or the muriatic acid at any cotton

bleachers. This acid extracts writing from paper, ink spots, iron moulds, &c. from cotton.

*To make Muriate of Tin.*

Take eight ounces of marine acid, and dissolve in it, by slow degrees, half an ounce of granulated tin, when this is done pour off the clear into the bottle you mean to keep it in for use, weakening it if required, with pure filtered river water.

*A cold Indigo Vat for Silks, Woollens, &c.*  
(*French Method*)

Take four pounds of East India indigo, well pounded and sifted, put them into one gallon of vinegar, which must be set over a slow fire, twenty-four hours, to dissolve. At the expiration of this time, if the indigo is not sufficiently dissolved, pound it in a mortar with the liquor, adding now and then a little urine; afterwards put into it half a pound of the best madder. Mix these well, and pour them into a deal cask, containing sixty gallons of urine; mix well again, and stir them well morning and evening for eight days, till the liquor is green, and when stirred produces froth like other vats. It may then be worked immediately, always stirring it beforehand. This vat remains good till the dyeing wares are entirely exhausted, and will dye silks blue by dipping them in warm water, and then

putting them in the vat for a longer or shorter time as the colour may be required. Deep purples and mazarine-blues must first be passed through archil and hot water : then in the vat, and then in the archil, and so proceed till you have obtained the desired colour.

A vat is generally made of half a wine cask, cleanly planed out, and well washed in clean soap suds.

*For preparing sour Water that is used in dying Scarlet and Reds of all Kinds on Silks, Cottons, and Woollens.*

To make fifteen gallons of sour water, boil the same quantity of clear river water, and pour it into a tub upon a peck of wheaten bran. Let the liquor rest that night, but stir it next morning, and so continue to do four or five times a day. The tub should be put in the sun, if it be in the summer, as the water will then turn quicker.

Lime water is often-used: a lump of lime should be immersed in water. When it cracks or falls to pieces it should be taken out and put into a boiler and boiled half an hour; keep this lime liquor for use.

*English Method.*

Take from three to four pounds of the East India indigo, and from two to three pounds of pearl ash, and from five to six ounces of the best

crop madder ; mix the pearl ash and madder together, and boil them in three-fourths of the water of the vat, for ten minutes or a quarter of an hour. This liquor must remain in the copper, and the fire be damped ; previously to this the indigo must be cleaned and pounded in a mortar, with a bucket of hot water, with about half a pound of pearl ash. When this has stood to settle, the clear is to be poured into the vat. Then proceed as before with a like quantity of pearl ash, and so a third time if required. Then pour grounds and all into the vat. A pound or two of bran, well cleared from the flour, should be put in the bottom of the vat, and the solution of indigo poured upon it ; the vat must be then stirred, observing no heat must be applied to it till it comes of hand heat, when a little heat is added to keep this degree of heat up. It is continued in this state until it turns green ; when this appears stir it, and a coppery scum will rise on the top of the vat ; this should be blown off ; and if it again forms, the vat is come to work, and a pattern may be dipped in, and if it strikes, make a fresh liquor with a pound of ashes, and two ounces of madder ; pour this in, rake it well, and in two or three hours it will be fit to work.

*To make an Alum Tub.*

It is here proper to enumerate the colours necessary to be alumed, which are all yellows,



and reds, and shades from these colours, as crimsons, maroons, bright reds, yellows, gold colours, &c. &c. Small dyers have a small tub in which three or four pounds of alum is dissolved; and in this way, a tea kettle full of boiling water is poured on this alum after it has been beaten small. When this is properly dissolved it is to be emptied into a tub of cold water, containing about fifteen gallons. This tub must be made narrow at the bottom, and gradually wider and wider towards the top, so that when garments are put into it they may be more easily opened, and spread out to receive the alum regularly. A few small sticks are to be put across the top of this tub, and a pin. But as a fish-hook is also to be tied to a piece of string and let down just under the surface of the alum liquor, then fastened round these sticks, if a garment is wanted to be put into this preparation liquor it is to be sunk up and down two or three times by way of wetting it thoroughly. Then the widest end is hooked on to those pins, and the other end is let down into the water. If it is to remain in this liquor two hours, then in one hour change ends with it, so that it may receive the alum regularly. This precaution is absolutely necessary, because if any part of the garment should receive more alum than the other parts, the dye would be uneven. For full yellows and reds, it is customary to let the silks remain in the alum tub all night; but for delicate reds two



hours, more or less, is enough. In cold weather it is necessary to heat this alum liquor, by adding warm water to it; and even in summer, where a quick strong aluming is required it may be given hot, only the colour is not so bright.

N. B. All silks must be handled through warm water previously to their being put in the alum tub, and this is what is called wetting out. This alum tub will keep till the acid salts of the alum are spent.

*A Description of various Waters, with their component Parts and Effects on different Colours.*

Snow water contains a little muriate of lime, and some slight traces of nitrate of lime; rain water has the same salts in a larger quantity, and carbonic acid; spring water most frequently contains carbonate of lime, muriate of lime, muriate of soda, or carbonate of soda. River water has the same substances, but in less abundance. Well water contains sulphate of lime or nitrate of potash, besides the above named salts. This information is of the most essential benefit to the art of dying, as from this a judgment may be pretty accurately formed of the causes of the frequent failures in producing fine colours with certain waters; and the difference of colours, which we frequently find arising even from the same ingredients, water excepted. But any inconveniency

arising from the properties of the water may be obviated by attending to these distinctions. Should the water contain a salt, or a mineral acid, in the first instance, an acid will be requisite to neutralize it, and in the second, an alkali. Thus waters of any quality may be saturated by their opposites, and rendered neutral.

A striking proof of the effects of different waters on various drugs may be seen in the instance of Brazil wood, which must be prepared with the hardest spring water, as this contains the greatest quantity of carbonate of lime, muriate and carbonate of soda. In fact this water, which by its hardness is the most unfit for other purposes in ordinary life, is the best for the Brazil wood, which in fact will not give out the purest of its dye to any other.

*For discharging Colours.*

The dyers generally put all coloured silks which are to be discharged, into a copper in which half a pound or a pound of white soap has been dissolved. They are then to be boiled off. The copper beginning to be too full of colour, the silks are taken out and rinsed in warm water. In the interim a fresh solution of soap is to be added to the copper, and then proceed as before till all the colour is discharged. But for those colours that are wanted to be effectually discharged, such as greys, cinnamon, &c. when soap does not do, tartar

must be used. But for slate colours, greenish drabs, olive drabs, &c. oil of vitriol in warm water must be used, if other colours, roach alum must be boiled in your copper, then cooled down and your silks entered and boiled off, recollecting to rinse them before they are again dyed. A small quantity of muriatic acid, diluted in warm water, must be used to discharge some fast colours; the goods must be afterwards well rinsed in warm and cold water to prevent any injury to the silk.

*How to discharge Cinnamons, Greys, &c. when dyed too full.*

Take some tartar, pounded in a mortar, sift it into a bucket, then pour over it some boiling water. The silks, &c. may then be run through the clearest of this liquor, which will discharge the colour, but if the dye does not take on again evenly, more tartar may be added, and the goods run through as before.

*Directions for re-dying or changing the Colours of Garments, &c. already dyed.*

Upon this and other proceedings in the art, precise rules cannot well be given, as the change of colour depends upon the ingredients the garments have been dyed with. Sometimes when these have been well cleaned, more dying stuff must be added, which will afford the colour intended, and sometimes the colour already on the cloth must be discharged and the article re-dyed.

Every colour in nature will dye black, whether blue, yellow, red or brown, and black will always dye black again. All colours will take the same colour again which they already possess; and blues can be made green or black; green may be made brown, and brown green, and every colour take a darker than they at first possess. Yellows, browns, and blues are not easily discharged; maroons, reds of some kinds, olives, &c. may be discharged. For maroons, a small quantity of rock alum may be boiled in a copper, and when it is dissolved, put in your goods, keep them boiling, and probably, in a few minutes, enough of it will discharge to take the colour intended. Olives, greys, &c. are discharged by putting in two or three table spoonfuls more or less of oil of vitriol: then put in your garment, &c. and boil, and it will discharge to a white. If chymic green, either alum, pearl ash, or soap will discharge it off to the yellow, and this yellow may mostly be boiled off with soap, if it has received a preparation for taking the chymic blue. Muriatic acid used at a hand heat will discharge most colours. A black may be dyed maroon, claret, green, or a dark brown, and it often happens that black is dyed claret, green or dark brown; but green is the principal colour into which black is changed.



## CHAP. III.

ON ALUMING AND DYING SILKS, SATINS, RIBBONS, STRAW BONNETS, FEATHERS, &c.

*On Aluming Silks.*

NO alum is wanted for silks to be dyed blue, as indigo requires no astringent to make it adhere.

Silk should be alumed cold; for when they are alumed hot, it deprives the silk of a great part of its lustre. The alum liquor should always be strong for silks, as they take the dye more readily afterwards.

*On dying Silks in the Small, or False Dye.*

This is the mode practised by the rag dyers; though, among various recipes in this work, there are many for holding colours. As to garments whose colours are changed every year, if the colour preserves its full brightness during the season, it is as much as can be required. Without enumerating the whole, I shall now bring forward those colours that are most easily made, and most worn in spencers, shawls, pelisses, scarfs, bonnets, gowns, &c., beginning with light blue.



*Light Blue Silk.*

Your silk being boiled off in white soap and water, and made quite white, must be rinsed in lukewarm water. Then take a vessel of a sufficient size to wash your goods in; as, for instance, for a handkerchief a wash-hand bason. Pour into this a quantity of cold water sufficient to cover your goods to the depth of two or three inches. Then drop from your chymic bottle, one or two drops; and if the shade is to be azure blue, or pale blue, these will be sufficient; but if for a darker shade, use more chymic. Put in your goods, and handle them from five minutes to half an hour, according to the shade required, now and then lifting up with your hand some of the dye, and letting it fall again, look through it as it falls, to see if the chymic is expended; and then, according to the colour of the dye water, will be that of your silk.

Greens of all shades are produced from yellow and blue. Supposing the garment to be a lady's silk spencer, and intended to be dyed a full grass green, inclining to laurel, take a quarter of a pound of the best ground ebony wood, and put it in a small pan; pour a tea kettle full of boiling water on it; then stir it, and afterwards cover it with a cloth for a minute or two; strain it off; then enter your spencer, and let it remain half an

hour; then take it out, and rinse it in its own liquor from the bits of ebony wood which may be sticking to it. Have ready at hand a small pan of cold spring water, and pour into this a table spoonful of chymic, or more, as the depth of colour is required; rinse in spring water, and dry in a warm room.

Some persons, to save trouble in dying these greens, boil the silks for five minutes in a copper kettle with about a quarter of a pound of ebony wood in a small bag; then take out the silks and the ebony, check the boiling of the kettle with a glass of cold water, and pour in a table spoonful or more of chymic. The silks are then to be put in, and kept on the simmer from ten minutes to half an hour, till they come to the colour required. This is a very good method. Some put a bit of alum nearly as big as a hazel nut in with the ebony: this will make the yellow dye holding; but as it does not act on the blue, it is better omitted, that both colours may fade together. Green dyed with chymic is not holding; but it is what is most commonly used for ladies' articles of dress, both silks and woollens. The green colour is much more solid, when the blue and yellow are done together in hot liquor, with a bit of alum. But the first recipe is the brightest.

*False Violet, Pansy, and Colours bordering on,  
Purple.*

Purples are made by giving them a ground, or first colour, in a vat, more or less full, as you would have the shade to be. Into blood-warm water, pour a sufficient quantity of archil, from half a pint to a pint and a half; and when this liquor is at a hand heat, or almost scalding hot, put in your goods, and handle them well; and, by simmering them an hour, or thereabouts, you will have a pretty fine violet, or pansy, more or less full according to the quantity of archil used; but if the colour requires to be darkened, add barilla, alkaline lye, or pot ash, which will sadden it.

*To make a bright Red with the same Ingredients.*

Instead of adding pearl ash to your liquor, take out your goods, and put in half a wine glass of the solution of tin; stir it, put your goods in again, boil them half an hour; take them out again, and add half a pint more of archil, and as much more of the solution of tin: as at first put in your goods, and boil from ten to fifteen minutes; then take them out, and rinse in cold water. This last process will give them a fuller body. You will have a beautiful red, somewhat more lasting than any other false dye. This is well calculated for

ladies who can often afford to change the colour of their habiliments. A spencer or a mantle may be dyed every month throughout the year, at the expence of sixpence per month.

*For dying Pearl Grey, on Silk:*

First boil off your silk in white soap and water, and then, when clear and pure, rinse it in warm water. Supposing the article to be dyed is a silk spencer, cut rather more than a quarter of an ounce of white curd soap into thin slices; pour boiling water on this, and then stir and beat it well for five minutes, by which time the soap liquor will be at a hand heat; then put a small tea spoonful of chymic, or liquid blue, into the thin soap liquor, stir it, and put in your spencer; handle it over a quarter of an hour in this liquor, and it will be dyed.

*Of Grey Silk.*

Some dyers use, for such an article as a silk spencer, a very trifling decoction of logwood, added to a pan of warm water; running the goods through this; and when they are deep enough of the red of the logwood, take them out, and pass them through chymic in cold water; then slightly rinse, and dry them in a warm room.



*For a fast Grey, on Silk.*

Suppose this to be a silk spencer, pound one or two dyer's galls very fine, and pour boiling water on them; then handle your silk through this for twenty minutes, or half an hour; and in another pan dissolve a piece of copperas as big as a pea, or two peas; handle your silk through this, then it will be a grey, more or less full, as the quantity of ingredients and the dying drugs are increased to deepen the colour: to make them of a slate colour, take another pan of warm water, and about a table spoonful of the decoction of logwood (which is one or two ounces of logwood boiled for half an hour in the half of a half pint of water, and a piece of pearl ash as big as a pea); run your silk through this, which finishes it.

N. B. Recollect that only a small part of the decoction of logwood must be added to the pan of water, or the colour will be too full. Wash in two or three clean waters, and dry in the air, as this is a fast colour, and will stand all manner of proof.

A little fustic added to this recipe makes an olive grey.

*For a Stone-coloured Silk.*

Pound one or two blue galls, and boil them for five minutes; then cool your copper down by adding cold water; enter your silk, and simmer it,



twenty minutes; then draw it, and rinse it in cold water. In the interim, boil a fresh copper of water, and add to it, by degrees, a small quantity of solution of copperas. This will produce a grey; then add a sufficient quantity of purple archil. Sometimes, when the stone colour is required of a red sandy cast, red archil is used. Simmer your silk in this a few minutes, then draw and cool it in the air; rinse it in one or two cold waters, dry in the air, and frame it, or pin it out. For stiffening the silk, you may use isinglass dissolved in hot water; and, with a sponge dipped in this gum water, the silk must be rubbed on the wrong side, and dried by the fire.

*For a Slate-coloured Silk, as the Stone-colour above.*

Gradations of shades of grey may be made (ad infinitum) by varying the proportionate quantities of the ingredients.

TO DYE BROWN SILKS AND SATINS OF ALL SHADES, AND TO MAKE THE DYE HOLD WELL.

*A very pretty Hair Brown.*

If the article dyed is a silk pelisse, fill your copper full of river water; when it boils, put in a quarter of a pound of chipped fustic, two ounces of madder, one ounce of shumac, and half an

ounce of cam wood; but if not required to be so red, the cam wood may be omitted. These dye stuffs should boil at least half an hour, but may boil for two hours, that the ingredients may be well incorporated; and which should always be the case for browns, and all colours where two or three are mixed together. The copper must then be cooled down by pouring in cold water: the goods may then be put in, and simmered gently from half an hour to an hour. If this colour should appear to want darkening, or saddening, it may be done by drawing your goods, and adding a small quantity of old black liquor; or, for want of black liquor, a small piece of copperas may be used: rinse in two or three waters, and hang up to dry.

N. B. If the water boils too fast after the goods are put in, it may be apt to injure the silk; it is, therefore, preferable to keep it only on the simmer.

*To make another Brown, inclining more to a Mulberry.*

*For a Silk Pelisse.*

Proceed in boiling the dying wares as directed above, observing to cool the liquor before you enter the goods, as well as to wet out the silks previously to their being put in the dye.

Take Two ounces of shumac, or galls instead of them, one ounce.

One ounce of logwood.

Two or three ounces cam wood, or madder.

And if not sufficiently on the mulberry, add as much purple archil as it will require.

*To make a Brown inclining to a Brick Colour.*

*For a Silk Pelisse, &c.*

Take Dyer's galls, two ounces.

Cam wood, three ounces.

Fustic, one ounce.

Madder that has been boiled for two hours, from one to three ounces, as required.

Some add a small portion of powdered archil, if it should be too red. Browns may be diversified into innumerable shades, by boiling them a longer or shorter time, or by adding different ingredients. The principal dying wares used in dying browns, are fustic, madder, red wood, cam wood, shumac, alder bark, sandal wood-soot, rhinds of the walnut tree, walnut tree root, &c.

Fustic and alder bark being simply boiled in water produce yellows inclining to orange. Madder changes from a red to red brown, according as it is boiled a longer or a shorter time. Red wood

produces a brick coloured red, cam wood a red brown; walnut tree root, or rhind, or the green rhind of the walnut, gives a brown root colour.

*Another Root coloured Brown, in which neither Walnut Root nor Rhind are used.*

But this hardens the silk more than any other brown colour, on account of so much shumac being used with copperas, both of which are very corrosive, and tend to harden the goods.

Boil for half an hour from four to five or six ounces of shumac, from one ounce to three of fustic, and a quarter of an ounce of madder, and a little argil: when these ingredients are boiled enough, cool your copper down, put in your goods, and handle them well twenty minutes; then take out your silk, draw, and add two or three drachms of green copperas to colour with: then enter your silk, and boil it half an hour longer. Whenever I mention boiling in dying silks, simmering must be understood, as positively boiling silks injures them: draw, wash, and dry in the air.

*Another Brown of a Greenish Yellow cast.*

Proceed as before in the boiling; and add to your copper, when it boils, a quarter of a pound of fustic, three ounces of shumac, and a small



quantity of green copperas, or verdigris, and from a quarter of an ounce to half an ounce of logwood. If then it be not green enough, add a small piece of blue vitriol: but sometimes the fustic, and shumac, and verdigris alone will run it green enough.

Yellow browns are dyed with fustic, alder bark, old madder liquor, and saddened in old black liquor, or copperas.

Drab colour silks are done the same way as browns, only a smaller quantity of ingredients are used.

*To make Fawn Colour Drabs.*

Boil one ounce of fustic, half an ounce of alder bark, and two drachms of archil; or, as it may occur, I frequently make use of old madder liquor that has been used for dying reds, when nothing but the brown dregs of the madder remain, the red having been all extracted; but if madder is boiled an hour or two strongly, it has the same effect. From one to four drachms of the best crop madder must be added to a very small quantity of old black liquor, if at hand, supposing you require it to be darker. If you have no black liquor, a small piece of copperas will answer the same purpose.

*To make another Drab, bordering on the Beaver Colour.*

If the article to be dyed is a silk spencer, or silk



equal in quantity, when your water boils, check its boiling, and put in half an ounce of archil, two drachms of madder; and this may be saddened by taking out your goods, and adding a piece of green copperas as big as a pea; or sadden it with pearl ash, which is preferable. This recipe does for a spencer, or two yards of silk; but, according to the colour required, you may add to or diminish the ingredients.

Another drab, inclining to a grey, called a Dove Colour, is made by using more archil. When your copper boils, put in a quarter of an ounce of shumac, boil it ten minutes, then add chymic and archil, according to the shade required; when your liquor is of the colour you wish for, which may be seen by lifting it up, then cool down your copper, and entering your silks, boil them to colour.—Some dyers use Brazil logwood, shumac and copperas.

### *The French way of dying Yellow Silk.*

First alum your silks, half an hour, in cold alum liquor, then wash them. Pass them through a pan of weld liquor at a hand-heat. If they are to be of a lemon yellow, dissolve a trifling quantity of blue vitriol in your pan to the colour required. If orange colour is wanting, first dye the silk buff, with arnatta or turmeric, but

arnatta is the best; then let it be washed in cold water, and alumed afterwards, for twelve hours, then run through the welds to the colour required.

*Of Yellow Silks and Shades from the same.*

There are so many ways of dying yellow, that I scarcely know which to begin with, and I would recommend my readers to try the different yellows, upon a small scale, as I shall give directions for so doing, remembering that a larger quantity of ingredients, in proportion, should be used, when any recipe for a larger quantity is to be reduced; for instance, let us suppose three pounds of woulds were to dye three yards of silk, then if one yard only was to be dyed, a pound and quarter should be used. To produce the various shades of yellow, there are more drugs, barks, leaves, flowers, roots, &c. which afford that colour, than any other; but the principal woods used in yellows and their shades, are welds, otherwise called woulds, fustic, American bark, zant, turmeric, arnatta, and the bark of the ash-tree. There are a great many others, but these specified are most generally used.

I shall now advert to those yellows that are most used.

Supposing the article to be dyed, is a silk

pelisse, and is at first perfectly white, but that you intend it shall be a full bright yellow; then at night hook your pelisse (after it has been taken to pieces and tacked by the ends together with thread) in the alum tub, there suffer it to remain till the middle of the next day, or even till the day after, if you are not in haste; when you intend to dye it, fill your copper full of water; when it boils, put in from a pound and a half to two pounds of the best welds, boil for half an hour, then take your welds out, and skim your copper, that no filth may stick to your silk, and pour in a pint or two of cold water to check its boiling; then enter your pelisse from half an hour to an hour, taking care that the copper does not boil. When it comes to the fulness required, take out your silk and wash it in two or three spring waters.

*Another Yellow, bordering somewhat on the Blue cast, or Lemon.*

Put your silk in warm water to soak; in the meanwhile pour a pail of boiling water on a piece of blue vitriol, as big as a boy's marble; when this vitriol liquor comes to a hand-heat, draw your silk from the warm water, squeezing it gently, and immersing it all at once in this vitriol liquor, and keep handling it over for half an hour

at least, which will tinge the silk of a blue cast, though hardly perceptible, then draw it out, and squeezing it gently, it should be put in a bag, or damp cloth, and let to remain a day or two. But if it should have what you may think too much of the blue cast, you may then rinse it in luke-warm water for a minute, then gently squeeze it, and put it on a plate. In the interim, boil, for half an hour, about a pound and half of welds, take this dye liquor and pour it into a pan, and when at a hand-heat, enter your silk, keep handling it well. If you should require it to be more on the green blue, you may dissolve a small piece of blue vitriol in warm water, draw your silk from the dye, and run it through this vitriol liquor, and back again in the dye liquor, until you have the shade required.—Rinse it in two or three waters.

*Another Yellow, bordering on the Gold colour.*

This is the same as the first recipe given for yellow silks; only when you take out your welds, add a trifle of powdered turmeric, stirring it well in the copper for ten minutes; this will give it a gold cast, and when dyed, should be slightly rinsed, and dried in doors.—Some give it the turmeric first, then rinse it in cold water, and alum it, then give it the welds.



*Another Yellow.*

This is prepared by dipping the goods in the alum tub, for a longer or shorter time, as the colour is intended for fulness. For a very full yellow, it should remain for a day and a night in the alum tub, and sometimes longer; if for pale yellows, a shorter time.

But supposing the garment to be a gown or pelisse, and to be a full yellow, bordering on the orange, give it a full preparation, and put into your copper a pound and a half of the best welds, and two ounces of the best fustic, and a quarter of an ounce of powdered turmeric; these ingredients must be boiled half an hour, then taken out, and the silk rinsed in cold water, and then put into the copper. After first cooling it down with cold water, handle it over at a hand-heat, taking care to preserve the copper at this degree of heat. If the colour should not appear full enough, you may increase the heat, but it must not boil above a minute or two, as it will then turn to brown. Take out the goods, and rinse in two or three cold waters, if required. This colour and every other, where turmeric or arnatta is used, should not be dried in the sun or wind.

Another orange is prepared as the foregoing, only after the silk has been twenty minutes in the



dye liquor, consisting of only welds, a solution of arnatta is prepared as follows:—You must add to the liquor about a quarter of an ounce of arnatta, and put it into a tea-cup, with nearly an equal quantity of pearl ash and boiling water thrown on it, and well rubbed together, and when entirely dissolved, draw out your silks, and pour in this solution of arnatta, &c. When this has boiled up, cool down your copper, put in your goods again, and simmer them for half an hour, or until the colour is even. It will sometimes require a piece of pearl ash added to the liquor in the copper, when the colour will not take on evenly without. —Rinse it slightly in spring water.

*A most Beautiful Bright, though a False Yellow.*

Supposing the article to be dyed is a silk spencer, put in a pan, of a convenient size, from one to two ounces of the best turmeric, and an equal quantity of pearl ash, or the best yellow soap; pour on this a sufficient quantity of boiling river water, to make it of the consistence of treacle, or just as much as will dissolve it thoroughly. In the interim, have a pan full of hot water, in which pour your solution of turmeric and soap, handle it over in this dye liquor for half an hour, till it has taken a full orange or nasturtium colour, then slightly rinse it in cold water. Then having

ready another pan, full of hard spring water, add to this water a sufficient quantity of oil of vitriol, enough to give your liquor a slight acidulous taste; stirring it well, take your dyed silk and run it quickly through this acidulous water, and so continue to do till the colour is of one uniform shade; that is, of a beautiful bright yellow.—Dry it in a warm room.

*Another very bright yellow, but perhaps not permanent.*—A slight preparation is given by the silks remaining, I should suppose about from two till six hours in the alum tub, as the shade may be required. In the interim boil a pound and a half of welds half an hour; take a sufficient quantity of this liquor, and pour it into a pan, and handle your goods through for half an hour, then wash them three times in cold river water. In the interim, dip out of your copper, into your pan, some fresh weld liquor, in which pour half a wine glass full of the solution of tin, then enter your silk, and handle it quickly for twenty minutes; wash out in spring water, and dry in the open air.

*Another Way, newly found out, for Dying a bright Yellow.*

Take a sufficient quantity of American bark or quercitron bark, and put it into your copper;

when it has boiled five or ten minutes you will be able to judge if it will require more bark. Boil this quickly for twenty minutes, then dip out a sufficient quantity to cover your silks in a pan, into which put a small quantity of muriate of tin, pass your silks through warm water and wring them gently, then put them in this pan of dye water and handle them till they are nearly cold, with two sticks; when it is cold, draw out your silks, throw your liquor away, and dip another pan full of bark-liquor out of your copper into the pan; handle your silks through this also ten minutes, then add as much more muriate of tin as the colour you intend may require. Rinse out in its own liquor slightly, and dry in a warm room.

Turmeric of itself affords a yellow, and is secured or prepared with sea salt, but it is not much used on account of the price of that drug. Arnatta affords also a yellow bordering on the orange, when dissolved with equal parts of pearl ash, and gives its colour to silks in warm water; but is not a lasting dye, turmeric also being dissolved with pearl ash affords its colour in like manner. The ash and alder bark also afford a yellow as well as the root and the leaf of the dock.

Peach and pear tree bark also produce a yellow, and so does every bark and root, which being chewed excites an astringent taste in the mouth. Even those that have not this property will give a

yellow, though not of the fast dye. Flowers also afford a yellow dye, but of the fugitive kind. The barks and roots above-mentioned are to be prepared and worked exactly in the same manner as the fustic or welds. Yellows of all shades are dyed according to receipts given, but must be varied by using a greater or lesser quantity of preparation and more or less dying stuff; which is best learned by practice.

*For dying Reds of all Shades, Crimsons, &c. a Scarlet Silk Shawl of a permanent Colour.*

First dissolve two ounces of white soap in boiling water, handle your shawl through this liquor, now and then rubbing such places with your hands as may appear dirty, till it is as clean as this water will make it. A second or even a third liquor may be used, if required, and the shawl must be rinsed out in warm water.

Then take half an ounce of the best Spanish arnatta, and dissolve it in hot water; pour this solution into a pan of warm water, and handle your shawl through this for a quarter of an hour; then draw and rinse it out in clean water. In the meanwhile dissolve a piece of alum as big as a horse bean in warm water, and run your shawl through this half an hour; then draw out and rinse in clear water. In the interim boil a quarter of



an ounce of the best cochineal for twenty minutes, then dip it out of your copper into a pan, and run your shawl through this from twenty minutes to half an hour, which will make it a full blood red. Then take out your shawl, and add to your liquor in the pan a quart more of that out of your copper, if you have as much remaining, and about half a small wine glass full of the solution of tin, or more if you require your colour to be of the scarlet. But observe that too much solution impoverishes the colour; when cold, rinse it slightly out in spring water.

*Another Scarlet, called false Scarlet.*

Clean your shawl as described in the last receipt; then dissolve from a quarter of an ounce to half an ounce of arnatta in warm water; handle your shawl through this twenty minutes, draw out and rinse in cold water. In the interim dissolve a quarter of an ounce of alum in hot water, and when this alum-liquor is at a hand-heat, put in your shawl for twenty minutes, draw and rinse clean in cold water. In the meanwhile boil a quarter of a pound of ground Brazil wood for half an hour: take this dyë liquor and pour into a pan, and handle your shawl through it for half an hour, then draw, and add half a wine glass full of the solution of tin, enter your shawl and handle



it ten minutes longer. It must be then rinsed slightly in its own liquor, and dried in a warm room.

Some use turmeric instead of arnatta, and many do not use any alum, but only a solution of tin. Then after it has had a weak liquor of Brazil, and is strongly impregnated with solution of tin, a second and stronger liquor of Brazil is prepared at a hand-heat. The shawl is then run through this strong Brazil liquor for twenty minutes; then more solution of tin is added. This way the colour is more bright, but less holding.

### *Maroon Silk.*

This must be first well cleaned, then strong arnatta is to be put in hot water, then washed out; then alumed and washed out: then two dyer's galls are pounded, and boiling water poured on them. The silk is run through this liquor also. It must be then slightly rinsed through Brazil liquor, at a hand-heat, and likewise in its own liquor, and dried in a warm room. This colour may be saddened by passing it through liquor of warm water, in which a small piece of copperas has been dissolved, and on some occasions the silk is passed through warm water, in which a trifling quantity of purple archil is mixed.

*To dye Crimson Silk.*

There are many ways of dying crimson silk ; the first in grain, which is a fast colour. Boil off your silk perfectly clean, and rinse it in warm water, then hook it into your alum tub for thirty-six hours, take it out and gently rinse it in cold water. In the interim boil for half an hour or an hour (if for a spencer), from a quarter of an ounce to half an ounce of well pounded and sifted fine cochineal, dip this grain liquor boiling hot out of your copper into a pan ; then enter your spencer and handle it for half an hour (if it is intended for a blood crimson) and as your liquor gets cold, take fresh from the copper until it is all exhausted. This colour will of itself become a crimson, by only drawing it and rinsing in cold water. But when dried it is very dull compared with the crimson furnished chemically ; when your liquor is still hot, dissolve a small piece of sal ammoniac as big as a full sized pea : when this is dissolved in about half a pint of boiling water, throw into this alkaline liquor two drachms of the best pot ash, stir it quickly ; then drain your silk from the grain liquor, and add as much of this prepared alkaline solution as it may require, by first putting one quarter of it to your grain liquor ; then handle your silk ten minutes, and if not

crimson enough, add more; when you find it crimson enough, rinse in cold water, and hang to dry, and this will be a crimson of the fast dye. Some dyers let it remain longer in the alum tub, and give the silk two or three hot grain liquors, others simmer it in the copper.

*A false Crimson.*

This is used generally in London, and elsewhere, on account of the dearth of cochineal, but some persons instead of cochineal use the *sylvestre* or *campessiane kermes* and gum lac, or the coccus, &c. but cochineal or Brazil wood answer best, as they are generally known, and simple in their use. But a dyer always charges extra, when any thing is dyed in grain, frequently to the amount of a guinea, when for a false dye the charge would not exceed seven shillings.

Supposing the article to be a silk gown, and to be dyed quickly of a crimson, clean your silks well, then dissolve an ounce of alum, and rinse them in very warm water, and when the alum water is at a hand-heat, enter your article, which must remain in this liquor for two hours, now and then handling it over. At the expiration of that time, take it out, and slightly rinse it in cold water. In the interim boil half a pound of ground Brazil wood, for half an hour or an hour; then pour

it into your pan, and enter your goods and handle them half an hour; then take from your copper the remaining part of your Brazil liquor, and put into your pan, and handle here until you see your gown, &c. will not take a fuller colour. To crimson it to the shade required add a sufficient quantity of purple archil. It may be rinsed by adding a quart or two of your dye liquor to a pan of warm water; then dry it in doors.

*Another Method of dying Crimson.*

This is done by pouring boiling water on cudbear. After your silks are well cleansed, handle them through this cudbear dye for half an hour, and if not crimsoned enough, they may be saddened or made more of the violet, by adding pearl ash, chamberlye, or any other alkaline solution. They must be rinsed slightly.

*Another Crimson.*

Pour boiling water on a sufficient quantity of purple archil, handle your silks through this for half an hour; then take them out and add such a quantity of oil of vitriol to your archil as shall be sufficient to make it of the desired shade. Some use solution of tin instead of oil of vitriol, and this makes a pretty bright red.

Crimson may also be made with madder and archil, or madder and logwood; the goods being

first soaked in alum ; but this is seldom used for silks, though very often for stuffs made of silk and woollen. It is also much used for Irish poplins, &c. and must be prepared with alum, and a small quantity of tartar, and then simmered in a copper after the ingredients, viz. the Brazil and madder, have been previously boiled at least for half an hour.

*Another Crimson taken from the French Method of Dying.*

Dissolve two ounces of gum arabic, and to every pound of silk add two ounces of cochineal, and the third of an ounce of agaric, and the same quantity of turmeric ; mix and put them into your copper, and when they begin to boil, and the gum is dissolved, put your silk in, let it boil two hours, and then it is dyed ; wash it slightly, and dry it in the shade.

The above recipe will produce a most beautiful violet, if it is dipped for a short time in a blue vat of any kind.

*To dye a Crimson Shawl.*

Take about a table spoonful of cudbear ; put it into a small pan, pour boiling water upon it, stir and let it stand a few minutes, then put in your



silk, and turn it over a short time, and when the colour is full enough, take it out ; but if it should require more violet or crimson, add a spoonful or two of purple archil to some warm water, and dry it within doors. To finish, it must be mangled or callendered, and may be pressed, if such a convenience is at hand.

### *Lilacs.*

As a lilac may be said to be a shade of crimson, as crimson is of purple, these are only the two same colours mixed with purples in greater or lesser quantity. In the purple the blue predominates ; in the violet or lilac, the red and blue are nearly alike, but in crimson the red prevails.

### *To make half Violet or Lilac.*

For every pound of silk take one pound and an half of archil, mix it well with the liquor ; make it boil a quarter of an hour, dip the silk quickly, then let it cool, and wash it in river water, and you will have a fine half violet, or lilac, more or less full.

### *How to prepare Safflower.*

Supposing you want to prepare two pounds of safflower for your use, it must be picked with the hand, and put it into a pail in which small holes

have been made. When the safflower is properly divided, it must be put under a stream of running river water, and a man must continue pressing it with his hands or feet, when he will find it give out a yellow menstruum or liquor. This method must be persevered in for two or three hours, or till no more yellow can be expressed. It is here to be observed that safflower yields two colouring bodies, a yellow and a bright red, known by the name of pink or rose colour. When done, the safflower is to be taken, and opened as before, put in a pan, and an ounce or two of pearl ash is regularly mixed with it, and when it is thoroughly mixed, the safflower being put into a cullender, a stick or two is put across a pan, and the cullender put on these sticks over the pan, which is to receive the liquor that may drop from the safflower. Cold water is then to be sprinkled on the safflower by degrees, and when the latter is thoroughly impregnated with the pearl ash, it will give out a dusky red liquor. More water is then to be added and sprinkled regularly over, the safflower, and this now and then pressed between the hands to extract the remaining dye. When the safflower has given out all its dye, the liquor in the pan is used to sprinkle it with ; but that the liquor may not be too weak, three pounds of good safflower need not yield above half a pail full of deep red dye. When the safflower has yielded the whole

of its dye it may be lightly pressed between the hands and thrown away. As the liquor, in the alkaline state, is useless for dying silk, it is customary either to use tartar or lemon juice, or some other thing having the same property, in order to turn this alkaline liquor, therefore care should be taken not to use too much pearl ash in extracting the dye from the flower, but add lemon juice, generally used for silk, and tartar for cotton, to this salt liquor. A sufficient portion of either of these acids must be used to saturate the whole alkaline salt of the dye, and then it is immediately fit for use. This dusky red colour, when saturated or turned with the acid of the tartar, is called saturated, or turned liquor. It is a custom with artificial flower makers, dyers, &c. (when they have dyed the articles they want) to dip some cotton in some lemon juice, and soak it there for two or three hours, then being taken out and gently squeezed and immersed in the remaining saturated pink liquor; in this state it turns from a dusky red to a cherry colour or a pink. The cotton is left here for three or four hours to imbibe its full portion of the dye-liquor. This cotton is then hung in a warm room to dry, and is used when required as follows:

If you wish to dye a silk bonnet a light pink, cut off a piece of the dyed cotton as large as a card, which must then be immersed in a pint of warm

water, in which a little pearl ash has been dissolved. After the cotton has been in this warm pearl ash water five minutes, being squeezed, it will give out all its dye, then saturate this dye water by adding to it a sufficient quantity of lemon juice. It is then fit to dye with, by adding to it either cold or warm water. Before any silk is put in it should be well cleaned, rinsed in warm water, and dipped in a weak acid liquor, as for instance, lemon juice; then put into the dye, and left till it obtain the shade required. If for deep red, it must be held very near the fire, and a larger quantity of dye must be used.

N. B. The deep rose colours are sometimes topped, or made fuller, by passing the silk through an old cochineal liquor.

### *Different Ways of Dying Peach Blossom.*

Clean your silks well, and rinse them in warm water to extract the soap that may remain, then slightly alum them; lastly, pass them through purple archil in warm water, and this will be of the colour of red violet; the silks should then be taken out, and a sufficient quantity of solution of tin added, which will immediately turn this liquor from a violet to a bright red.

Some dyers, for a silk spencer, &c. pour a quarter of a pint of archil, or less, into a small pan, and



dissolve a sufficient quantity of alum, and a little tartar, which they add to this archil dye, to give it that shade of the peach blossom required.

Your silk having been washed in soap and water, and rinsed in warm water, is to be dipped in this liquor till it receives the shade intended. Others do it by preparing the liquor as here directed; but, in the interim, add a trifling quantity of the solution of tin in warm water, and pass your silk through this previous to dipping it in the dye. The quantity of solution used should be barely sufficient to acidulate the water. This colour may be done also with cochineal and safflower, and it is then fast. You may proceed as for scarlet, only adding some prepared safflower dye, and a little old cochineal liquor, if you mean to dye very deep.

### *To make flesh Colours.*

Flesh colours are done with cochineal. In preparing your silk, wet it first in warm water, then in warm water again, in which a small quantity of alum water, and a smaller of tartar have been dissolved. Both these together must hardly make the water taste. Then if you have been dying common red with cochineal, dip a small quantity of this old dye into your pan; but if too strong, add hot water, then put in your goods, and handle



them to colour. If you want them deeper, strengthen your liquor and your dye.

### *London Smoke Colour.*

There are several ways of dying this colour; it is, in fact, a full bodied grey brown. For a silk spencer, boil in your copper about two ounces of ground shumac, and add a very small quantity of archil; then dip out into a pan, and handle your silks after they are well cleaned for about twenty minutes. Then add a small portion of old black silk, cotton, or woollen liquor, and handle ten minutes longer; but in the want of black liquor, &c. copperas being dissolved, will answer as well. The London smoke may be termed a dingy shade of black, and is of the colour of smoke ascending from chimneys where coals are burnt.

### *On Dying Blacks and Brown.*

It is immaterial how great the quantity of dying wares are, which is used in dying either black or brown, so that they are according to proportion. For blacks I would always advise a good body for finishing.

*For a Black Silk Gown.*

When your copper boils put in half a pound of alder bark, a dyer's gall or two, pounded, if you have it; boil (or simmer) your silks in this for one hour, then draw them out and cool them well, by hanging them up in the air. In the interim, add a piece of copperas, as big as a small horse bean; when this is dissolved, cool down your copper, by adding cold water, and put in your goods, keeping your copper on the spring half an hour, all the while handling your goods over with a stick: this is what is called bodying the silks, stuffing or preparing them to receive the black dye. Then draw them out again, and cool them and wash them. In the interim, add to your copper six ounces of fustic, and half a pound of logwood, and a quarter of a pound of alder bark; enter your goods, and simmer them one hour. After handling them well, draw them out, and add half an ounce of copperas, and two ounces of logwood, and enter your goods again, and simmer for two hours. If the liquor in the copper, on the goods, being taken out, does not appear of a jet black, more copperas must be added, and boiled half an hour, taking care not to poison the liquor with too much copperas. If the silks should be wanted of what is called a blue black, a little more logwood and a small lump of blue

vitriol should be added, and the silk may remain in the copper all night, if the copper is not wanted. Next morning, wash and dry.

N. B. You may add a little more fustic, or rather less logwood, as this receipt specifies.

Should the silks appear rusty, or what is known to the dyers by the name of copper burnt, or foxy, it is customary to pass them through warm water in which about half a tea-spoonful of oil of vitriol has been thrown; this will leave the silk of a beautiful raven black. If the silk is a soft and thick one, you may make a thin soap lather, and pass it through; but this must not be done when it has been passed through vitriol. And if care be taken to boil the silk in this process, without any of these alternatives, it will be a most beautiful black, and wear a long while. The oftener the silks are taken out and cooled, the blacker they get.

#### *For Dying Silk Stockings Black.*

These are dyed like other silks, excepting that they must be steeped a day or two in bark liquor, before they are put into the black silk dye. At first they will look like an iron grey; but, to finish and black them, they may be put on wooden legs, laid on a table, and rubbed with your oily rubber, or flannel, upon which is oil of olives, and then

the more they are rubbed the better. Each pair of stockings will require half a table-spoonful of oil, at least, and half an hour's rubbing, to finish them well. Sweet oil is the best in this process, as it leaves no disagreeable smell.

*For Dying Straw and Chip Bonnets.*

Chip hats being composed of the shavings of wood, are stained black in various ways, as by being boiled in strong logwood liquor three or four hours. They must be often taken out to cool in the air, and now and then a small quantity of copperas is added to the liquor, and this continued for several hours. The saucepan or kettle that they are dyed in may remain with the bonnets in it all night; the next morning they must be taken out and dried in the air, and brushed with a soft brush. Then a sponge is dipped in oil, and squeezed almost to dryness, and the bonnets are rubbed with this all over, both inside and out, and then sent to the blockers to be blocked.

Others boil them in logwood; and, instead of copperas, use steel filings steeped in vinegar; but finish as above.

*For Dying Straw Bonnets Brown.*

Take a sufficient quantity of Brazil wood,



shumac, bark, madder, and copperas, and sadden it according to the shade required. See also the Cotton Dye for Browns.

*For Dying Straw Bonnets Black.*

Wash them in a little warm chamberlye and water, then rinse them in cold water, and put for each bonnet about a quarter of a pound of alder, bark, and logwood, an equal quantity of each. Boil your bonnet in this liquor one or two hours, then draw, and add a small piece of blue vitriol, as big as a small tick bean, then enter your bonnets, and boil for half an hour longer; then take them out and cool them in the air, and add two ounces of fustic chips: boil these half an hour, then put in your bonnet again, and put in, at the same time, a piece of copperas, as big as a small bean: boil again for one hour, then take the bonnet out and cool it in the air, and if the liquor remaining in the boiler or copper is of a jet black, you may enter the bonnet, and let it remain all night; but if the liquor is not quite black, add a handful more of bark, and a little logwood and copperas (I am thus explicit in dying straw bonnets, as it is a trade of itself). The next morning take out your bonnets and dry them in the air, and when dry brush them with a soft brush, and then rub them with an oily cloth (called by the trade an



oily rubber), then send them to the blocker's to be blocked; and if this recipe is attended, to it will be a most beautiful raven black. It is customary with some hat dyers to steep them in oak saw-dust one night previous to their being dyed, and is a good method.

*For Dying and Cleaning Feathers.*

Feathers, to be dyed, must first be cleaned, by passing them through, or between the hands, in warm soap and water, and by giving them fresh liquors of soap and water, and at last rinsing them in warm water. If for yellows or reds they must be alumed in cold alum liquor for a day or two, according to the body of colour you require the feather to imbibe; then immerse them in your dye liquor.

N. B. The same preparation as would dye silk of the same intended colour, will dye feathers; in short, feathers are of an animal substance, and so is silk, &c. more alike in nature than any other two bodies, either animal or vegetable. You must remember, that in dying silks the water is used hot, or on the simmer, for most colours; but feathers must be always dyed in cold liquors, except for black, the dying wares being first boiled and then let to cool; your feathers must then be put in, and when this liquor is exhausted add a fresh one, pouring off the old liquor. For

dying feathers black, the same liquor as for silk must also be used, but with this difference, that for the feathers, the dying wares must be boiled for two hours, and then be used as warm as the feathers will bear, heating the liquor four or five times. It often happens that a feather is four or five days dying black; but violets, pansies, carnations, light purples, light blues, greys, &c. are dyed in ten minutes; the light blues in chymic; the greys in galls and copperas; the violets in warm archil and water; the greens with ebony wood, in warm water and chymic. These are to be finished by being gently beat out over the hand, and this will dry them; and just before they are dry it is requisite to curl them, which is done with a round edged knife.

Brown feathers next require our consideration. Neither cam-wood, bar-wood, nor the other woods will do; but madder, archil, walnut root and rind, and copperas are used, brown being a shade of the black, and such a number of combinations entering into it, must be dyed as black is, only not adding the copperas till the feathers have been one or two days in the liquor. The copperas, in the browns, serves to blacken them. Galls and shumac are always used for browns. If for red, or browns, madder, archil, &c. are mostly used, and saddened by copperas. In fawn colours, bright root colours, &c. fustic is also

used; but for chocolate, coffee, &c. yellow is omitted; and consequently fustic, or other yellow dying wares, are not requisite. If the stem or quill is required to be stained, the feathers must remain longer in the dye-water, and a little heat may be applied.

*To Clean Black Feathers.*

Pour a pennyworth of bullock's gall into a wash-hand bason; pour warm water on this and run your feathers through it: rinse in cold water and finish them as you would other feathers.

*Of Cleaning Brown, Fawn Colour, and White Feathers.*

All these colours are cleaned after the same method. Suppose a plume of three feathers are to be done, take a large sized wash-hand bason, cut a half quarter of a pound of pure white soap into thin slices, and pour boiling river water upon it; add to this a piece of American pearl ash, as big as a pea: when this soap water comes to a hand heat, keep passing your feathers through this liquor, and draw them gently between the hand. When this liquor is spent, a second must be made of half the quantity of soap, but of an equal quantity of ashes; as at first, you must run your feathers through this liquor, and at last rinse them in cold water, and beat them across the left hand, holding the feathers in your right,

and thus, by continuing this ten minutes, the feathers will be nearly dry: then, with a fruit knife, or any other round-edged knife, take one or two of the fibres, or flue, at a time, and scrape it with the knife, turning it round as you want the curl to be; then, if wanted flat, put it in a large book to press.

*For Cleaning Copper or Brass Utensils used for Dying.*

After you have been dying any colour in your copper or brass boiler, it is frequently tinged with the dye used; it is therefore customary to clean these utensils out with a small quantity of vitriol and water, a little fine sand, or ashes, and a coarse flannel cloth; it must afterwards be rubbed quite dry.

*How to take the Stain of the Dye from the Hands.*

Take a small quantity of oil of vitriol and pour it into some cold water, in a wash-hand bason, and wash your hands in it without soap; the dye will then come off, and you may cleanse them completely in hot soap and water.



*To take off the Stains of Light Colours, Reds, Greens, Blues, &c.*

Wash your hands in soap and water, in which some pearl ash is dissolved.

N. B. If the vitriol water is not made very strong, it will not injure the most delicate hand, nor leave any red or coarse appearance.

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## CHAP. IV.

ON DYING COTTONS, DRESSES, BED-FURNITURE, &c. &c.

### *A Copperas Vat for Cottons.*

**THIS** vat may be made on a small scale; it is to be worked cold, and will keep good any length of time. When worked it must be well raked an hour before it is used, and before any cottons are dipped in it, they must be well wetted in warm water, and then dipped without any other preparation from the lightest blue to the darkest shade. By giving the cottons a shade of violet with archil and warm water, previously to their dipping in the



copperas vat, all shades of purples are made from the violet to the fullest purples, plum colours, &c. Thread, cotton, crapes, &c. and even thin silks may be dyed in these vats by boiling them in archil, then dipping them in the vat alternately. Half a wine cask would make a copperas or other vat quite big enough for a small rag dye. The copperas vat is very convenient for a family, particularly when there are many females in it.

There are several ways of preparing a copperas vat. I have always found the following succeed best.

Dissolve twelve ounces of the best Spanish indigo in three quarters of a pint or a pint of soap boiler's lye; this will take a day and a half dissolving, and should be done over a slow fire in an earthen pot. In another vessel put twelve ounces of sifted slacked lime with three pints of water, boil this a quarter of an hour, and dissolve in this clear lime water, twelve ounces of green copperas, and let these two solutions remain till next day, then put into a deal barrel, with one of the heads knocked out, from eighteen or twenty gallons of clear river water, blood warm. In the mean while add your solution of indigo, lime and copperas together; stir them well.

N. B. Before you pour your water into the barrel, a double handful of bran should be thrown in, and the whole of the warm water thrown upon

it. Then add your three solutions, well stirring them for a quarter of an hour; then let it rest, and if in the summer season it will come too in three or four hours.

Be cautious in seeing that the lye, called soap boiler's lye, (composed of soda and pot ash) dissolves the indigo perfectly before you mix it in the vat; for, if it is not in perfect solution it will neither rise nor work. It may be known when it is in a state of perfect solution by its raising and thickening the lye. It is properly dissolved when it remains suspended in the lye, and makes it of the thickness of oil, then it may be considered in a state of perfect solution, and will be sure to raise and work well. This vat may be worked the next day, and when the ingredients are all spent with continually working, it may be replenished by adding a small quantity of copperas dissolved in lime water, and the same of indigo dissolved in an alkaline liquor, such as soda, pot ash, &c. &c. &c. This vat may be made of any size by adding more ingredients, such as lime, copperas, pearl ash and indigo; and may also be decreased in quantity to the bigness of a quart, only observing to proportion your ingredients as you decrease it in size.

Some dyers add to this vat a quart or two of water of old iron, put into some vinegar and water to rust. They also boil or simmer for five minutes

two or three ounces of madder in three pints of water, and when at about a hand heat, they throw this clear madder dye into the vat, and rake it; after this it is fit to work.

N. B. I approve of the iron liquor as well as madder, and always use it. The iron liquor, as the dyer's men call it, acts as a drawer on, or suction for the indigo, and the dye is more solid and quicker dyed. It is impossible to fail in making this vat, provided you take care to dissolve your indigo thoroughly. It will then turn on the green cast. Some dyers put an equal quantity of pot ash, lime, and copperas, regularly incorporated together, and then pound and sift the indigo over the vat; you must stir it well, and let the vat rest a day or two, then stir it again; some think the indigo is better mixed and divided this way.

### *For bleaching Cottons.*

Cottons are bleached and made white by running them through muriatic acid and water; the dying of them is somewhat similar to silk. It would be impossible to give recipes for every shade, as this would fill a large volume; but the reader is reminded, that from the primitive colours already particularly described, every hue and shade may be produced. The recipes which follow, are for the colours most commonly wanted.

*To Dye Blue.*

You must first wet out your cottons in warm water, and hang them in your vat; this is done by having a stick put across it. Having strings pinned to the articles, hang them on the sticks, and let them down an inch or two below the surface of the liquor: your cottons are to remain in a longer or a shorter time, as required, now and then taking them out and changing ends, that the dye may take on evenly. When your article is dyed, take it out and rinse it in cold water.

*To dye a Puce Colour on Cotton.*

Boil the cotton in archil to a full violet, then handle it quickly through your blue vat.

*For a red Puce.*—Soak your gown, &c. in hot water with half a pound of shumac all night. Take it out next morning, and rinse it in cold water; then pour half a pail full of boiling water on a pound of purple archil; handle your goods through this for half an hour. If it is too blue for the shades required, dissolve about a quarter of an ounce of alum in water; run your goods through this to the shade required. If it should now be too red, have a pan with warm water in



which a small bit of pearl ash has been dissolved, and it will blue it again to colour.

*For Slate coloured Cotton.*

First wash your cotton clean in soap and water, and rinse in warm water, then put a half pound of shumac in a sieve, and pour boiling water over it, and let it drain into a pan, then enter your gown, and let it steep for two hours, now and then handling it, that it may take the colour evenly ; then draw it and run it through a pan of warm water in which a quarter or half an ounce of copperas has been dissolved for five minutes. It will then be a lead grey, more or less full. But to turn it on the blue slate, draw your gown from that liquor, and run it through a decoction of weak logwood liquor, which is made by boiling an ounce of logwood chips, a quart of water, with a small bit of pearl ash, and throwing it into a pan of warm water ; handle the gown in this till it comes to the shade required, then wash and dry it in the air.

To make the above a lavender shade, put a small quantity of Brazil wood in with the logwood.



*Another Grey, called Pearl or Silver Grey.*

Fill your copper or boiler half full of river water, when it boils take out a half pail full, and strain it through a quarter of a pound of shumac; put in your gown to steep in this liquor for half an hour. In the mean time throw a handfull of wheaten bran into the copper, and boil it five minutes, then take two drachms of powdered and sifted alum, and throw it into you copper. This will throw up all the scum, which be sure to take off carefully with a bowl, then draw your goods from the shumac liquor, wash them clean in cold water, put them again into the copper, and let them simmer ten minutes, having previously boiled two or three ounces of logwood for half an hour with a quarter of an ounce of American pearl ash. This decoction should be boiled some time before it is used, and kept in a jar. A small quantity of this decoction is to be added to the bran water in the copper, then cool down your copper, and enter your goods, and let them simmer, handling them well, and adding the decoction to the colour required, then draw and let them be rinsed slightly, and dried in a warm room.

Every gradation in the shades of slates or greys are made as in the foregoing recipes, by adding a larger or smaller quantity of dying wares.

*For an Olive Green.*

Let this be first washed in soap and water, then wetted out in warm water ; then boil two ounces of chipped logwood, three ounces of chipped fustic together for half an hour ; then dip out your dye liquor, and put it into a pan with hot water ; then put in your goods, then dissolve two drachms of verdigris in a tea cup full of warm water, which put into a pan of cold water, then take your gown from the dye, and run it through the verdigris water, well handling it for ten minutes, then take it out and wash it in clean water, then through the dye liquor, and again in the verdigris water, and so continue this process till you obtain the colour required, only take care to wash it out of the verdigris water before you put it into the dye liquor ; dry it in the shade.

*For Yellow Cottons.*

To make a lemon yellow, wash your article well in soap and water, then rinse it in warm water ; then, for every yard of stout cotton, dissolve a piece of blue vitriol as large as a horse bean, in boiling water ; and when the water is at a hand heat, put the cotton in, and handle it well for half an hour. In the interim boil a quarter of

a pound of welds to every yard of cotton. Boil it well for half an hour, then dip the liquor out in a pan and handle your cotton through this till it comes to the fullness required; then take it out to cool, and when cold, wash it out and dry it in the air.

*For a full Yellow.*

Wash your goods well in soap and water, and rinse in warm water; then dissolve from a quarter to half an ounce of alum into a pan of boiling water; when at a hand heat, enter your goods, and let them remain for two hours, handling them now and then to take the colour evenly, then boil a sufficient quantity of welds, and dip the liquor out in a pan, and take your goods from the alum, and put them into the dye, and handle them well for one hour, or till they come to the shade required, then wash and dry in the air.

*Another Yellow, supposed to stand all Manner of Proof.*

First wash the articles in soap and water, then rinse in warm water and boil together equal parts of sugar of lead and alum, say a quarter of an ounce of each to a yard of cotton, handle your goods well through this, taking in due proportion, then draw and wring every part alike. If care

is not taken to make the cotton receive the preparation evenly, the dye will be much fuller in one place than in another. Then put into your copper one pound of welds and boil it strongly for one hour, then dip your weld liquor out in a pan, and handle your goods well through at a hand heat till they come to the colour required. Wash and dry in the air.

N. B. Handle your cottons through this liquor for half an hour at least.

*For a Gold Colour.*

The articles must be washed, as above, with soap and water, and you may use or not use a small quantity of sugar of lead with your alum; after preparing boil with your welds, to every yard of cotton a quarter of an ounce of turmeric, then dip your liquor into your pan, and handle your goods as directed; then wash and dry in the air.

*For an Orange Colour.*

The process in this is the same as above, only instead of turmeric put in the same quantity of Spanish annatto dissolved in pearl ash and warm water, and when this is done, throw it into your copper, then dip it out into a pan, and proceed at a hand heat, as for yellows. Dry in a warm

room : some dyers run it through weld for half an hour before they add the solution of arnatta.

*Nasturtium.*

This is the same as orange, only not so strong of weld liquor, but rather more so of arnatta and pearl ash.

*For Red Cottons.*

Take your gown, &c. and let it be washed in soap and water, and rinsed in warm water ; then take a quarter of a pound of shumac and run some boiling water through it into a pan, then steep your gown in this for two hours, and prepare your alum water by dissolving two ounces of alum in a pan of hot water ; then take your gown and wash it clean out of the shumac, and put it into the alum water, and let it remain in two hours at a hand-heat, handling it often ; then boil in your copper one pound and an half of peach wood, and a little Brazil wood ; boil these well for half an hour, then strain your liquor through a sieve into a pan ; take your gown out of the alum, and give it a slight rinse in cold water, then put the gown in the pan of dye liquor, and handle it at a hand heat for half an hour or an hour, still adding fresh liquor out of your copper, till it comes to the fullness required ; then wash it in



the clear of the dye liquor, and dry it in a warm room.

*For another Red inclining to Crimson.*

Wash well in soap and water as before, then clear in warm water, then in shumac liquor for two hours. Being washed out well with cold spring water, put your gown or cotton into strong alum liquor for two hours, or if for a crimson, all night. Now add to your copper, one pound and a half of peach wood, and let it boil half an hour, till the colour is extracted; then add a sufficient quantity of logwood decoction to the pan in which you have drawn off your liquor from the copper to the colour required; into which put your gown, and handle it well over for half an hour, at a hand-heat, and you will find it a good colour. But to make it a full crimson, add more of the logwood decoction, with a small piece of pearl ash, and dry in a warm room.

N. B. Logwood decoction is made by boiling half a pound of logwood in two quarts of water, and a small quantity of pearl ash.

*To make a bright Scarlet, inclining to Scarlet for a Gown, &c.*

This must be washed well in soap, and cleared in warm water; then take two or three ounces of

shumac, with boiling water poured on it in a pan, let it steep for two hours in this liquor, well handling and squeezing it with your hand; then take it out and wash it well with cold water, then put the gown in strong alum water for two hours, again well handling and squeezing it with your hands so as to make it strongly imbibe the alum all over. In the mean time have your copper three parts full of hard spring water, in which put three drachms of tartar; when the water becomes hot put in a quarter of a pound of ground Brazil, and let it boil well for half an hour, then strain off the liquor in a pan; and, when it comes to a hand-heat, put in your goods and handle them well for half an hour; then draw your gown, and add to your liquor in the pan the half of a wine glass full of solution of tin in aqua regia, stirring your liquor well, and it will instantly become a bright red, bordering on scarlet. Then enter your goods again for ten minutes; rinse in its own liquor, and dry in a warm room.

N. B. Some dyers put in tartar or bran water to harden it. When this is first put into the copper, as the Brazil will not give out its colour but to hard water, you may put a small quantity of purple archil in your pan before you use the solution of tin. Some dyers think that archil gives it a richer colour.

*For a Madder Red.*

Some dyers use the best madder for red cottons,

and put in the pan, at a hand-heat, some Brazil liquor. The recipe for a red shawl, inclining to crimson, is as follows: Wash your shawl in hot soap and water, and rinse in warm water. In this put in two or three ounces of shumac at a hand heat, for twenty minutes. In the interim, boil two ounces of madder for about twenty minutes, or simmer it for half an hour. In the meanwhile, having put your shawl in the liquor of preparation, consisting of two ounces of alum dissolved in boiling water, handle your shawl now and then. After keeping it in for one or two hours, drain it, and let it cool; then rinse it slightly in cold water, and draw your madder liquor from the copper into a pan; enter your shawl, and handle it for twenty minutes, or longer. If it requires to be fuller coloured, dip out of your Brazil tub half a pint or less of fermented Brazil liquor, and add to your madder liquor in the pan. When dyed enough, draw and rinse it in cold spring water, and hang to dry.

*Scarlet Cotton done two Ways, and on a Plan that has not long been generally known.*

For a shawl, rinse in soap and water, wash it out in warm water; then, in two ounces of shumac, boiled four or five minutes, and then poured into a pan. When at a hand-heat, handle

your shawl through for ten minutes; then draw your shawl, and when cold rinse it well in cold spring water. In the mean while clean your copper or boiler, and put in a sufficient quantity of spring water, and a very small quantity of white tartar; boil five minutes, then cool down your copper, having previously passed your shawl through a solution of turmeric in hot water, and having again rinsed it in cold water, put it in the copper, when at a hand-heat, and pass it through five minutes; then draw your shawl, which will be somewhat impregnated with the acid of the tartar; then take of the saturated or (turned liquor) of the safflower, put as much as you may require of this dye liquor into a pan, and if the pearl ash should not be sufficiently overcome by the tartar or lemon juice, a little more tartar may be added to the pan, then enter your shawl and handle to the colour required: some use spirits to rouze it, if necessary.

### *A Plum coloured Cotton.*

The article for this must be boiled in purple archil, and passed through the vat to the shade required; then through archil; and when cold, rinsed in cold water. If this should be too blue, it may be rectified by passing it to the colour re-



quired, through warm water, in which a drop or two of oil of vitriol has been added: sometimes, as for reds, shumac is first given. If for very light blues, put into a pan half full of warm water, a sufficiency of the liquor of the vat, and the cotton may be dipped herein to colour. I have said all that is necessary on dying blue, plum, purple, and their shades with the vat.

### *False Purple on Cotton.*

This is done by passing the goods through strong alum liquor for two hours; then put into your copper a quarter of a pound of logwood, more or less, boil them half an hour; then cool down your copper, put in your article, and simmer it for half an hour; then add pearl ash to colour. Pearl ash will sadden it to the depth of colour required. All gradations of shades may be made this way, from the violet, the pansy, &c. to the darkest purple.

### *Another Method.*

Put archil and pearl ash in your copper, and this, kept at a hand heat, dyes nearly the same colours.

N. B. No blues, purples, plums, &c. are half so fine as those dyed in a vat.



*Brown Cottons.*

Wash you cottons well in soap and water, then rinse them in warm water; then pass them at a hand-heat through shumac, in a pan for an hour; then draw and rinse, and pass them through alum water for twenty minutes. In the meanwhile boil brazilletto in your copper for half an hour; then cool down your copper, enter your goods, and keep the liquor at a hand-heat till it has taken the desired redness; then draw your goods and handle them through a pan of warm water, in which a little copperas has been dissolved. In the mean time add madder, cam wood, or red wood to your copper, with more shumac, if required, for half an hour; then cool down your copper, and keep it at a hand-heat; put in your cotton, and boil to colour.

*Another Brown.*

Supposing the article a gown, you must wash it and rinse it in warm water. Then boil a quarter of a pound of shumac, one ounce of madder, three ounces of fustic, saddened by copperas, first drawing your goods, and adding copperas. When dissolved and thoroughly mixed with the liquor, cool down your copper and enter your

gown; keep the copper at a hand-heat. Some use a great body of archil in dying these browns; by these different ingredients the shades may be varied without end.

The walnut root, the green rind of the walnuts, &c. are used for dying cottons brown; so are log-wood and shumac, in dying chocolate, &c. which are saddened by copperas. When the browns are too red and dull, it is customary to add a very small quantity of red tartar which clears them.

*In dying a Cotton Gown Black.*

You must observe more copperas may be added if required; but if once the dye is poisoned with using too much copperas, not only the texture of the cotton will be injured, but the woods will not give their colour, and a good black can never be made.

The recipe that follows, I consider the best for black cotton; but I have dyed black various ways: the first method I followed for a considerable time; but the oak dust has the best suction, and it also gives the greatest body for the other ware.

For a gown, take half a pint of ground shumac and put it into a sieve, and place it in a pan; then pour boiling water on it, and let the shumac water run into the pan; then put in your gown,

and let it steep for six hours ; then dissolve two ounces of copperas in another pan of cold water, into which put the gown ; handle it well, and let it remain for two hours ; then take it out, and slightly rinse it ; then take about three or four ounces of good slacked lime ; put this in a pan of cold water, and let it stand for a quarter of an hour ; pour off the clear, then enter your gown, and handle it well for ten minutes ; take it out and wash it, and prepare your copper with half a pound of chipped logwood, and one pound of fustic ; boil these half an hour ; then cool your copper, and put in your gown for half an hour ; then take it out and add an ounce or more of copperas ; then put in the gown again for half an hour ; take it out, cool it, enter it again for twenty minutes, taking care to handle it well all the time ; then take it out, wash it, and dry it. If it should not dry so black as you wish, leave your liquor in the copper, and add a little more copperas and chipped logwood, and boil it again for an hour, handling it well all the time : if it should not appear to have body enough, add an ounce or two of shumac, and a little more copperas.

*For another Black.*

First clean your cotton well with bullock's gall and warm water, then rinse in warm water. In

the interim take two ounces of chalk or whitening, put them into your copper with half a peck of oak saw-dust, and eight or ten gallons of river water; boil these together half an hour, then draw off the clear liquor into a pan, into which put your gown, and let it remain for twenty-four hours; if you have time, if not, let it remain a night, handling it now and then; then take it out. In the mean time dissolve from one to two ounces of copperas; run your gown through this for half an hour, then rinse it clean in cold water; then boil together in your copper half an ounce of shumac, three quarters of a pound of fustic, half a pound of logwood, half an hour, cool down the copper, and enter your gown; then let it simmer for half an hour, taking care to handle it well, then draw it out, and add half an ounce of copperas; let it boil five minutes; then cool down your copper, enter your goods, and let them simmer for an hour; then take them out, wash and dry them, and let the dye-liquor remain in the copper till you see whether your gown dries black enough; if not, put it in again, add one ounce more of logwood, a pinch of shumac, and a very little copperas. Simmer these for an hour, or longer, as you may see occasion. Be sure to keep your goods well stirred in the copper, turning them over with your clothes-stick. Your copper must always be cooled down before you



put in either your cottons or silks, and not be kept boiling, but only on the spring, or ready to boil.

*For black Linen, Cotton or Thread, after the French Method.*

First steep them in galls or shumac six hours; then alum them strongly, dip them in a weld-liquor, and make a strong decoction of logwood in your copper, to which add a quarter of a pound of blue vitriol to every pound weight of the substance that is to be dyed. Your goods must be well washed in cold water, but not wrung hard. They must be afterwards dyed in madder, using half a pound of this dye for every pound weight of goods to be dyed. The articles must then be dipped in a boiling soap-liquor, handled ten minutes, and dried in the air.

Cotton velvets are dyed as plain cottons are, and silk velvets as plain silks, and finished by being pinned out, and then well brushed backwards and forwards before or near a fire, or in a warm room. Crapes are finished by being passed through a little gum, or red leather cuttings; size them well, beat them between the hands, and let them be pinned out as on a frame.



*To finish Cotton and Silk Velvets.*

This is done by brushing them when almost dry, near a fire; and, if pinned out on a table, (for want of a frame), rub them with a hard brush to and from you, till the nap or plush raises itself upright, and every hair appears to stand in its place. Velvets are seldom stiffened: but when they are, a small portion of gum or isinglass must be dissolved in water; and lightly rubbed on the wrong side of the velvets, with a sponge wrung almost dry.

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## CHAP. V.

ON DYING WOOLLENS, STUFFS, GENTLEMEN'S AND LADIES' CLOTHES; AND DIRECTIONS FOR MAKING A WOAD VAT.

*On the Woad Vat.*

**I** WILL here give the process of the woad and other blue vats, as taken from the work of a very ingenious dyer. The process here laid down I have practised myself with the greatest success; though (excepting the woad vat) the other blue vats may be made fifty different ways, always remembering that the cold vat is mixed with pearl ash, copperas, or green vitriol, lime, madder, and

bran. The hot vats are prepared either with water or urine: if with water, pearl ash and a small quantity of madder must be added: if with urine, alum and tartar must be joined to the indigo. Both of these vats, being principally intended for wool, require a moderate degree of heat; but, at the same time, strong enough for the wool to take a lasting dye, such as will withstand the destroying action of the sun and air.

I beg here to observe, that the liquor of all vats appear green beneath the surface, as also does all woollen cloths, as soon as they come out of any vat; but, being exposed to the air, they immediately turn blue; and, were it not so, the dye would not be lasting.

#### *Of the Garden Woad, or Pastil Vat.*

A copper set to work as near as possible to the vat, must be filled with water that has stood some time; or, if such water is not at hand, a handful of dyer's woad, or hay, is added to the water, with eight pounds of crust of fat madder; but if the old liquor from a vat that has been used in dying from madder can be procured, it will save the madder, and have a better effect.

The copper being filled about three in the morning, it must boil an hour and a quarter. It is then conveyed by a spout into a woad vat, in

which a peck of wheaten bran has been previously put. Whilst the boiling liquor is emptying into the vat, the balls of woad must also be put in, one after the other, that they may be the easier broken, raked, and stirred. This is to be continued till all the hot liquor from the copper has run into the vat; which, when a little more than half full, must be covered with cloths somewhat larger than its circumference, so that it may be covered as close as possible, and left in this state four hours; then it must be *aired*, that is, uncovered to be raked, and fresh air let into it; and to each ball of woad a good measure of *ware*, as it is called, or slaked lime, thrown in. What is meant by this measure, is a good handful. The lime being scattered in, and the vat well raked, it must be again covered, leaving open a little space, about four fingers, to let in air. Four hours after, it must be raked again, without serving it with lime; the cover is then put on as before, leaving an opening for the air. In this manner it must be let to stand two or three hours, and then be well raked again. If the vat is not yet come to work, that is, if it does not cast blue upon the surface, or if it still works or ferments, which may be known by raking, and plunging with the flat of the rake in the vat; then, being well raked, it must remain one hour and a half more, carefully observing if it yet casts blue. It is then to be served with water,

and the quantity of indigo judged necessary is to be put in: it is commonly used in a liquid state at the rate of a dye house kettle full for each ball, if for a woad vat. The vat being filled within three fingers breadth of the brim, is to be raked, and covered, as before: one hour after filling it with water, it must be served with two measures of lime for each ball of woad, giving more or less, according to the quality of the woad, and what you may judge it will spend, or take, of lime. There are some kinds of woad readier prepared than others, so that general and precise rules cannot be given. On this head it must be observed, that the lime must not be put into the vat till it is well raked: your vat being again covered, put in a pattern. The vat being kept entirely covered for an hour, the pattern is then taken out, to judge if fit to work: if so, the pattern must come out green, and, on being exposed to the air, it will acquire a blue colour. If the vat gives a good green to the pattern, it must be raked, served with one or two measures of lime, and covered. Three hours after it must be raked again, and served with what lime may be judged necessary. It is then to be covered, and an hour and a half after, the vat being then settled, a pattern may be put in, which must remain an hour, to see the effect of the woad. If the pattern is of a fine green, and turns to a deep blue in the air, another pattern must be dipped in, to



see the effect of the vat. If this pattern is deep enough in colour, let the vat be filled up with hot water, or, if at hand, old liquor of madder, and rake it well. Should the vat still want lime, serve it with such a quantity as you may judge by the smell and handling to be sufficient; this done, it must be again covered; and one hour after, put in your stuffs, and make your overture. This is the term used for the first working of wool in a new vat.

*Marks by which you may know how to conduct a  
Vat regularly.*

A vat is fit to work when the grounds are of a green brown; when it changes on its being taken out of the vat; when the flurry, or bladders at the top, are of a fine Turkish, or deep blue; or when the pattern which has been dipped in for an hour comes out a fine deep grass green.

When the vat is fit to work, the *bever* has a good appearance, being clear and reddish, and the drops and edges that are formed under the rake in lifting up the *bever* are brown. Examining the appearance of the *bever* is lifting up the liquor with the hand, or rake, to see what colour the liquor is of that the vat has under its surface. The sediment, or grounds, must change colour (as has been already observed) when taken out of the *be-*



ver, and must turn brown on being exposed to the air. The bever, or liquor, must feel neither too rough nor too greasy, and must not smell either of lime or lee. These are the distinguishing marks of a vat when it is fit to work.

The process of the woad vat just given may be termed a digression, as it is impossible for any but a dyer, or one acquainted with the art, to conduct a vat made with woad, or even with indigo. The expence of vats, also, is such as families would not be willing to incur; nor is it necessary, as, at most large dye houses, a woad wool vat is kept, and, by sending what woollens you may have for the colour, you may always have them done at a trifling expence. A vat, however, may be made from the size of a pail to that of a hogshead, and it will keep good till the ingredients of which it is prepared are wholly exhausted. Merely by stirring it an hour before it is worked, it will always be in readiness, constantly observing to wet your cottons, crapes, woollens, &c. thoroughly all over, in order that they may take the dye evenly. Thin silks, intended for plums, prunes, dark purples, &c. may also be dyed in this vat, by first passing them through hot purple archil, then through the vat, then through archil again, and so alternately, till they have taken the desired shade. There are other methods of dying blues, which will be given hereafter.

I shall now give the method of dying olive greens. They may be said to be a brown green. The following is the method, as used by the small, or rag dyers.

*For a Woman's Pelisse.*

When your water in the copper boils, add from a quarter to half a pound of fustic, from two ounces to four of shumac, and from two to four ounces of logwood or more, as you require the shade to be; but if it requires to be of a green brown, a larger proportion of fustic and shumac must be used. Then the goods are to be taken out, and a little verdigris added: if this verdigris does not green it enough, add logwood chips, as you require the colour to be deeper. Copperas also will sadden this colour, and lime browns it.

It is almost impossible to give the exact quantity for a garment, as the goodness or badness of the drugs would in these colours cause so great an alteration, as not to resemble the colour intended. But a single trial will be sufficient to guide you. The goods are boiled as for brown; but often they do not require above an hour, and may be saddened, or made darker, by copperas; and, if the dying wash, or liquor, does not draw on, or strike fast enough, a little verdigris must be dissolved in water, and added to your boiling water, which will

cause them to adhere. For olive green, you may use a little alum with the fustic.

*For dying of Woollens Green, from the lightest to the darkest Shades.*

Green is produced by a combination of blue and yellow. There are two sorts of green, the fast, and false; but ladies' clothing, as also broad and narrow cloths, are often dyed with the false, known by the name of Saxon green, and generally this is much more beautiful than those called fast, or permanent greens. The fast greens are dyed yellow first, or blue, then dipped in the woad vat. Instead, however, of the woad vat, the false chymic, otherwise called Saxon, is used in the false, the making of which has been described.

If the goods to be dyed are required to be somewhat durable, it is customary to boil them first in alum for half an hour; about two pounds of alum for a quarter of a hundred weight of cloth: the way, however, generally practised by the rag dyers is, for instance, for a pelisse or man's coat, of a good full green, when your copper boils, put in from half a pound to a pound of fustic: when this has boiled half an hour, add a bit of alum as big as a small walnut, then enter your goods, boil ten minutes; then take them out, draw, and add a small wine glass three parts full of chymic; boil

from half an hour to an hour and a half, as it may require; they are generally very well and evenly dyed in three quarters of an hour; they may be saddened, if required, with copperas; and if to be bluer, more chymic is added; if to be of yellow green, less chymic, and more fustic; for a pea green, or any light green, it is not necessary to alum the goods first. Put into your copper a little fustic, and a sufficient quantity of chymic barely to colour the liquor; let your fustic boil ten minutes before you add the chymic.

*For a chymic Blue on Woollens.*—You must observe all through this process not to let the water be much hotter than you may be able to put your hand in, or the colour will be of a green cast. When the water is hot, cast a handful of wheaten bran in a bag, and put in your copper; and when it has simmered a quarter of an hour, draw it out, and add a table spoonful of powdered tartar, and a sufficient quantity of chymic to the colour required; afterwards enter your pelisse, &c. and keep handling for half an hour, or thereabouts, recollecting that your goods, when dyed, will be of the same blue shade your liquor appears of when lifted up and dropped off the hand. Chymic blue on woollens seldom lasts beyond a season.



*A Process of dying Blue by Logwood.*

This is quite a false colour, and should not be used where the goods are to be exposed much to the air, but is very beautiful in appearance.

When your water boils, add, for a pelisse, two pounds of logwood; when this has boiled half an hour, add a lump of blue vitriol, from one to two ounces, or more: when this is dissolved, cool your copper down, and enter your goods, and boil from one hour to an hour and a half, till the colour appears even and regular all over. Sometimes half the time dyes it.

*On the dying of Yellow on Stuffs and Woollens.*

I must begin this recipe by observing, *that all cloths*, previous to being dyed, should be well scoured, and also be run through warm water, before they are put into the copper to dye.

This colour is the first I have treated upon which actually requires any preparation, and which without it would not only have a dull appearance, but the colour would neither be even nor bright.

Supposing the garment to be dyed weighs two pounds, your copper should be made to boil, and six or seven ounces of alum put in it, with two ounces of tartar; when this is dissolved,



cool down your copper with cold water, and enter your goods, and boil them, if you have time, from an hour and a half to two hours; but it may often be prepared in an hour, if it has been well stirred in the copper; this liquor is then thrown away, and your copper filled and boiled. When it boils, put in about five or six pounds of welds, or woulds, the French weld is best. When this has boiled half an hour, more or less, till you may suppose it has spent its virtue; draw it out, enter your goods, and boil to colour. Sometimes half an hour's boiling does, or from that to two hours will do; but in this recipe the preparing liquor is very strong, therefore the colour will strike in, or draw on quickly. Supposing you want lighter shades, then half the quantity of alum and tartar will do, as lemon yellow, pale yellow, straw, &c.; but this recipe is for a full bright yellow: when dyed rinse in cold water.

*To make a very bright and beautiful Yellow on fine Cloth.*

This is done by giving it a preparation of half the quantity of the articles mentioned in the preceding recipe; and in ten minutes previous to your drawing your goods for rinsing, add a little muriate of tin; then enter your goods, and boil

them ten minutes. They must be slightly rinsed in spring water.

For gold colour, prepare as for the recipe preceding the last, only adding to the weld powdered turmeric and fustic, according to the shade required.

For orange colour, and the like shades, the same process is to be used as specified in the last recipe, only with the addition of arnatta, which must be dissolved, with nearly its weight of pearl ash, made into a perfect solution, and otherwise furnished as the preceding recipe for a full yellow.

If a permanent orange colour is wanted, instead of arnatta, a small quantity of best crop madder and fustic must be added to the welds; and these three drugs, viz. welds, fustic, and madder must be worked well together with the same preparation as for common yellow, only do not let it boil in the alum and tartar quite so long as for a full bodied yellow: practice alone can make you a judge of what quantity of madder to use.

The welds a full yellow,

The fustic an orange yellow,

The madder a fire red.

And those three colours being properly combined, that is, used in due proportion, produces orange colour of the brightest dye. I am thus particular in order that you may vary the shades to your fancy. The proportions of alum and

tartar also will vary the simple colour of yellows. Please to recollect that your garment should receive the yellow of the welds and fustic before the madder is used, except you take care not to boil the madder; for whenever madder is boiled it turns brown, and consequently will not afford that clear red, which is so necessary for an orange. It must farther be observed, that madder gives a profusion of dye to woollens that have been prepared, therefore but a small quantity must be used for orange. Turmeric also gives a good deal of colour, therefore a small quantity does for gilding the yellows. There are many other things that dye yellow, as the American bark, yellow woad, ash bark, dock, the alder, and several others, but weld is the best. The American bark is used for very bright yellows, and muriate of tin in the finish.

### *Of Reds.*

This is a colour that requires a preparation of alum and tartar before it is dyed.

The first of these reds is done with madder, and is simple and easy.

Supposing the article dyed weighs about two pounds, or thereabouts.

When your copper boils, put into your boiling water, about six or seven ounces of alum, and

about two ounces of red tartar. When dissolved, enter your goods, and boil from one to two hours, handling well every fifteen minutes, and always keeping them under water, when not handling; then take them out and fill the copper with fresh clean water, pouring off the preparing water; and when this water gets pretty warm, so as you can bear your hand and arm in it, put in six pounds of the best grape madder, let this be well stirred in the copper, and well broken; and when the liquor is of a good red dye, which will be within half an hour, enter your goods, and handle them well one hour or thereabouts. This will produce a bright red; but if you want to have a fine red, you should decrease the quantity of madder, and add decoction of ground Brazil wood; and if you want them to be of a crimson cast, add purple archil to your pattern. The above is the cheapest red that is dyed.

*Reds from Brazil Wood alone.*

The water of preparation must for each pound of wool or woollen stuff, consist of four ounces of alum and one of red tartar and the hardest well-water must be used. The Brazil should be ground or rasped, and boiled at least an hour before the goods are entered; and they should also boil in the preparing-liquor, for two hours at least, and then be cooled from the preparing-



liquor previous to their being put into the copper in which the Brazil has been boiled. They should be rinsed in two waters, and dried in the shade, or in a warm room.

*Bright Red, otherwise called Fire coloured Scarlet,*

Is the colour of the king's livery, and that of the coats of the officers in the army. It is also much worn by ladies in their pelisses, mantles, scarfs, wittles, &c. I have followed the method of one of the best scarlet dyers in England, and this I have found by experience to produce colours superior to any other. With respect to the nature of the vessel it is dyed in, I have found it quite immaterial whether block tin, brass or copper, so that a net be let down into the vessel to prevent its touching the sides of it; and that clean sticks are used in the handling, and a clean woollen cloth thrown across the horse where it is to drain, that it may not spot. A cloth must also be put all round the sides of the copper.

*A Mode of preparing Scarlet Cloth.*

For each pound of cloth put from fifteen to twenty quarts of very clear river water into a small copper. When the water is lukewarm put in two ounces of cream of tartar, and one drachm and a half of powdered and sifted cochineal; and when the liquor is ready to boil, add two ounces



of the solution of tin, as made according to my direction. The fire is then made brisk under the copper, and when it begins to boil, the cloth is put in, after being passed through warm water, that it may receive the dye equally. The cloth is to be handled well in this liquor for an hour and a half; it is then taken out, and slightly washed in clean water. The colour of the liquor is wholly taken up by the goods; this is called preparing it.

To finish it, as a fresh water is prepared, in this you must put an ounce and a half of the best starch; and when the liquor is little more than lukewarm, six drachms and a half of cochineal, finely powdered and sifted, must be thrown in a little before the liquor boils. Two ounces of solution of tin is then poured in, and the liquor changes its colour from a blood red to a bright scarlet. Then make it boil, and having boiled a few minutes, cool your copper down, and enter your goods, and boil for an hour and a half; then take them out, and wash them, and the liquor is then in its perfection. If they should be too fiery, take a small bit of alum dissolved in warm water, and handle them, and this will sadden them.

Having given a recipe for crimson and red, I shall here produce others.

*For Crimson in Grain.*

These are easily made: your copper being ready to boil, put in for each pound of cloth or stuff two ounces and a half of alum, and an ounce and a half of white tartar; let this boil a minute or two, and then you may enter your goods, and boil them for an hour and a half. Then they are to be taken out and cooled in all places alike. The preparing liquor being emptied away, your copper must be filled again with fresh water, and when about lukewarm, put in about an ounce of cochineal, well ground and sifted through a fine sieve, and when this boils, cool down with a pint of cold water, enter your goods, and boil an hour or an hour and a half, as you may see occasion. They must be then taken out, washed and hung to dry. If a lighter shade is required, use less cochineal and less alum and tartar. A larger proportion of alum may be used, but not of tartar, as tartar would obscure the red, and leave a brick colour.

*Another Crimson.*

This is to be made as above, only when you put in your grain (cochineal) add a drachm of red arsenic, and a tea spoonful of burnt wine lees,

or for want of either, a small lump of pearl ash in a table spoonful of purple archil. It is to be noticed that turmeric, or young fustic, are often added in dying scarlet, and may be used to the shade required, which is done in the reddening, or second liquor, and is put in as soon as the second liquor boils, so that it may cool ten minutes before the grain is put in. You must be cautious not to use too much, as it will give it so much orange as to require a deal more cochineal to cover it, and will often spoil the colour, if more is used, then a little alum or warm water will sadden it. The crimson may be made much darker, by mixing any alkali, as pearl ash, &c. with it, or by using a little more alum in the preparing liquor.

### *Maroons,*

Which are a shade of the red, are done with Brazil wood and galls. Supposing the thing to be done be a pelisse; after the cloth is well scoured, boil it for half an hour in alum and tartar, as for madder red. Then in the second liquor, when you put in your Brazil, as for Brazil red, add two blue nut galls used by dyers, well pounded in a bag. After they have boiled a quarter of an hour, take out the bag in which they were before you put in your goods, for if the

galls are left in the copper in the bag, they may spot, and cause the dye to be uneven.

Some dyers boil the goods for an hour in galls or shumac, both being of the same nature; then draw them out, and wash in cold water, then boil for an hour in alum and tartar, using rather more tartar than for reds. This second preparing liquor is thrown away, and a third liquor is made for dying, with about half a pound of Brazil wood, and sometimes more, as the shade is required.

*To make a Decoction of Brazil Wood, otherwise called Brazil Juice, or fermented Brazil.*

Much Brazil is saved by this means, and it works much better. Fill your copper quite full of hard spring water; then put in three or four pounds of Brazil, for about ten gallons of water; boil them an hour, then draw off the clear of this liquor, and put it in a deal cask or pan, pouring fresh clean water on the Brazil grounds, boil as before an hour or two, and so continue till the Brazil is spent. Keep this fermented Brazil juice any length of time till it becomes oily, the older the better. In fact, this is the only way Brazil wood will give out its colour.

If a dark maroon is required, it is to be saddened by drawing the goods a quarter of an hour previous to their being dyed enough, and putting



into the copper a little dissolved green copperas, from a table spoonful to one and a half.

*For a Puce.*

A very beautiful fast coloured puce, which is, in fact, a purple brown; and the red puce may be termed a brown violet, or a *gris de lin*, and these are much worn.

Supposing the garment to be a pelisse; when your copper boils, add a quarter of a pound of the best Cam wood, three ounces of shumac, seventy-four pounds of logwood, and from half a pound to a pound of the best purple archil, and if you should want it of a deeper blue, add more archil: a small lump of pearl-ash or blue vitriol purples it. If required to be of the red cast, some dyers use either a small quantity of the oil of vitriol in the copper, or they pass the article through oil of vitriol in warm water after it is dyed. But, to prevent any occasion for this, be sparing of your archil, and use no pearl-ash. I dyed upwards of seventy pelisses in one season after the above method. You may proportion your ingredients to the colour required. Cam wood, as I have before observed, gives a red brown; shumac a greenish grey brown archil a blue violet; and logwood nearly the same colour: handle well, and boil one hour and a half; then wash and dry.



*Greys of all Shades.*

By referring to the former pages of this book, you will see what colours produce such and such shades ; for instance, from the blue, red, and yellow, are produced the red olives and the greenish greys.

Logwood produces both blue and red combined ; fustic a yellow ; and, by being saddened with copperas, first drawing your goods from the copper, any shade may be made from the lightest to the darkest, as greys, lead colour, stone colour slate, lavender greys, pigeon grey, and an infinite number of other shades ; sometimes if more red is required, madder is used, which, being boiled, affords a red brown. Cam wood must be used if more blue is wanted ; blue vitriol, or pearl-ash, if more green. Where fustic is used, add a little verdigris.

Those greys made in the false dye require no preparation, and in such a work as this, it is needless to give the method of producing fast colours of this kind. It is sufficient that those colours will stand the washing with soap, but will not bear strong acids. Oil of vitriol will at all times wholly discharge logwood and copperas, and a greater part of the shumac, and from these three ingredients slate greys, lead grey, pigeon

greys, &c. are made. In those colours inclining to green, fustic is used, as the blue of the log-wood and yellow of the fustic produce a green cast or hue in proportion as those colours predominate, minding not to use much fustic except you want a deep greenish grey.

*For Raven Grey.*

Supposing a pelisse is to be dyed, about three quarters of an ounce of alum pounded is to be put into the copper when it boils; then enter your garment, and boil for half an hour or more; then take out your goods, and add to your copper about an ounce of green copperas; when this is dissolved, enter your goods again, and boil for twenty minutes; then throw away your liquor, and let your goods cool, and be washed, and add about from one to two ounces and a half of log-wood chips, which must be boiled in a fresh liquor. When boiled about a quarter of an hour, enter your goods, and boil again to colour or pattern; lastly, sprinkle a thimbleful of powdered alum into your copper (if occasion require), and return your goods, five minutes, for this tends to clear them. Wash in two or three waters, and dry in the shade.

*For a Bright or Pearl Grey.*

Supposing it a mantle of about a pound weight, boil your water, and then put in about one ounce and a half of logwood—if good logwood, less may do, such as the campeachy logwood; boil this twenty minutes; add to it three or four drachms of pearl-ash, let this boil five or ten minutes. In the meanwhile, wet out your garment in warm water, and wring it; have also another copper or boiler, in which put a small bag with a handful of wheaten bran in it, and two drachms of powdered alum, the alum will throw the scum on the top of the liquor, which take off, then enter your garment for five or ten minutes, draw this, and add a bowl of the logwood decoction into the vessel containing the bran-water; then enter your goods, and boil to colour, adding more logwood when required.

N. B. This recipe may be performed in one copper, by making the decoction of logwood first; and many dyers do it in this manner.

*Another Grey,*

Which, being taken from one I had given me, I cannot answer for; the expence, however, is not two pence to try the experiment as

follows:—For one pound weight of cloth, take three ounces of alum, and five ounces of fenugreek, and boil them with the goods half an hour; then take it off, and add seven ounces of pearl ash, and three ounces and a half of Brazil; boil them gently with the goods half an hour; rinse them out, and it is added, that the colour will be very fine.

It will be needless to swell this book with numerous recipes for one colour, the shades of which are only diversified by a larger or smaller quantity of ingredients. The principal of these used by dyers for grey, are shumac, galls, logwood, fustic, and copperas. If you want a dead coloured grey, fustic is omitted, and either galls or shumac substituted. By adding copperas, the colour may be run down as dark as black, because grey is a shade of the black dyed with the same ingredients, except bark; and even blacks may be dyed without bark, by using more shumac instead of bark.

Moreno window curtains and bed furniture must be dyed the same way as other woollens are; and when so done, finished at the pressers, who will water press, or plain press them, as required, and which cannot be done well at home.

### *For Browns.*

To describe all the shades of brown, from the lightest fawn colour to the darkest brown, would alone fill a volume. Yet no colour is more easily



obtained, and the least practice will prove what I say. I will first give a list of what ingredients are principally used in dying brown. The first is walnut root, or the green rhind of the walnut, now almost out of use. Fustic, shumac, cam wood, red wood, logwood, bark, madder, and archil are still used. The fustic gives a yellow; the cam wood, a brown red; the shumac, a colour resembling a green grey brown; the red wood, used without any preparation, as is always the case with browns, gives something near the colour known by the name of brick colour; the walnut root, rhind, and bark, give of themselves a root colour; and logwood a red blue, inclining to violet; madder, after being boiled strongly half an hour, produces, without any preparation, a red brown; and with fustic, and a little shumac, makes fawn and drab colours, with the addition of a little archil, which tends at all times to brighten browns. Having given a slight sketch of the colours each drug produces, I will proceed to the mixture of them. All browns are saddened, or made to incline towards black, by copperas. Lime is often used for browns.

*For a middling sized Woman's Pelisse, a pretty Red Brown, remarkably bright; and the Cost of the Dye not more than Sixpence.*

When your copper boils, put in the following dying wares, viz.



Half a pound of ground cam wood.

2 ounces of shumac (ground).

1 ounce of logwood chips.

1 ounce of alder bark.

2 ounces of chipped fustic.

N.B. A larger quantity of ingredients may be used, but they must be in the same proportion as mentioned in this recipe.

When these ingredients have boiled half an hour, cool your copper by throwing in a pint of cold water; then enter your goods, and boil from one hour to an hour and a half; then draw, and add from half an ounce of green copperas to one ounce; as you wish the colour to be darker, add more copperas. Lastly, adding a tea spoonful of powdered argil, take out your goods, and rinse them in one or two clean waters, and hang in the air to dry; then send them to the press to be finished.

*A pretty kind of Fawn Brown.*

Take a quarter of a pound of fustic, or possibly not quite so much; one to two ounces of madder; shumac, two or three ounces; a little copperas and archil.

But if the shade requires it, more ingredients

may be added, and according to the quantity of cloth to be dyed.

There is scarcely a drug used in dying that may not be used in dying brown. You have only to put in what drugs you think proper, boiling them half an hour; then enter your goods, and boil them from one to two hours, as the shade is required.

Browns may be diversified in the copper “ad infinitum” by adding a larger quantity of the ingredient that produces the desired colour. For instance, cam wood makes it redder, fustic more yellow, shumac browner, copperas blacker, archil redder, logwood more of the puce, &c. &c.

*For dying Woollen Stuffs Black.*

Black, the fourth of the primitive colours, is one of the most tedious to perform, on account of the time it takes in dying, which is at least ten hours.

*To dye a Pelisse Black.*

Fill your copper with soft water to the brim, and when it begins to boil, add

4 ounces of logwood

3 ditto shumac.

3 ditto of bark, viz. alder bark.

When these ingredients have boiled half an hour, enter your pelisse, always recollecting to handle it over every ten minutes, which is done with a short stick, and when you have done handling it, keep it under the water, and boil your goods this first time an hour, then take out your pelisse and hang it across your horse or stick to cool. In the interim, take a bowl of your boiling liquor out, and put therein six ounces of green copperas to dissolve; when dissolved, put almost two-thirds of it into your copper and mix it well with the liquor, then check your copper by throwing in as much water as may have evaporated (or old black liquor if at hand), then enter your goods again, handling as before with a stick, &c. at a boiling heat, during an hour; then it is to be drawn again and cooled in all parts alike. In the interim add the remainder of your dissolved copperas; check your copper again with cold water or old liquor, and enter your goods again, and boil them as before for two hours; then cool it again. While the cooling is carrying on, put into your copper two or three ounces of logwood, and two or three ounces of bark, and an ounce of copperas, and nearly two ounces of pearl-ash, and about a half ounce of pounded argil. These ingredients must be made to boil one hour; when the copper must be checked as before, and the goods entered, and be made to boil one hour,


keeping them handled as before. Instead of the pearl-ash in this process, chamberlye may be substituted. If the cloth should not be sufficiently bodied, or should seem not to be black enough, you may add a little more bark, and a little more logwood and copperas; then put them in again, and boil them an hour: afterwards, having cooled your cloth, put it again into the copper, and there let it remain till next day; but if you are in a hurry there will be no occasion for this. Lastly, rinse your pelisse, &c. in three or four cold waters, and if this process is regularly followed it will produce a most beautiful black.

*For Dying Black Cloth Dark Green.*

Clean your coat well with bullock's gall and water, and rinse in warm water; then make a copper full of river water boiling hot, and for each coat take from one pound to one pound and a half of fustic; put it in and boil it twenty minutes, and then take a lump of alum as big as a walnut, and when this is dissolved in your copper, put in your coat and boil it twenty minutes; then take it out, and add a small wine-glass, three parts full, of chemic blue, and boil again from half an hour to an hour, and the cloth will be a beautiful dark green; then wash out and dry.



## APPENDIX.



### ADDITIONAL RECIPES FOR CLEANING AND DYING, WITH VARIOUS OBSERVATIONS.

**A**FTER the preceding recipes it is only necessary to remark, that the five primitive colours are, blue, yellow, red, black, and brown. Blues and black on woollens, are scoured with bullock's gall and water, and sometimes with chamberley; while all other colours are scoured with soap, either in the solid or in solution, as before described. The following additions and alterations will be found to embrace all the possible variations and improvements in the useful and entertaining occupation of dying.

IN cleaning silks of various colours, the water must be barely hot enough to extract the filth, and it is preferable to give the silk a second or a third liquor, rather than use the water too hot; therefore the soap had better be kept dissolved and added in a state of solution. Soft soap is generally used for coloured silks. Mazarine, garter, navy blues and buffs excepted; reds, yellows, browns, and fawn coloured silks, are cleaned with soft soap, as it is not so powerful in



its action, and contains less alkali. But for purples, blues, &c. alkalies are necessary; therefore, not only hard soap is used, but pearl ash, as it has an affinity to the wares those colours were dyed with; for both the vat as well as the ground colour are made from alkaline matters, which consequently tend to brighten and restore them where too much is not used. In like manner, reds, yellows, pinks, and shades from them, are cleaned with soft soap, and finished by being immersed in acid liquors, which have an affinity to the dye they are already saturated with, therefore all alkalies have the property of saddening reds, yellows, pinks, scarlets, &c. while acids injure blues, purples, violets, pansies, and every shade of these colours. Red archil is made from purple archil, by adding a small quantity of oil of vitriol and tartar to redden it.

*For dying Cotton and Muslin Blue.*

The theory of this is described in the directions for giving the azure to counterpanes.

As it may not be convenient for housekeepers in general to erect a blue vat for the purpose of dying their muslins and cottons, the following is a method of dying those substances with *Chymic Blue*; the recipe for making this may be found in page 35. This blue is not a fast colour, but answers for many purposes.

Take some of the liquid blue made with oil of vitriol and indigo; put this into a pan of convenient size, but large enough to hold twice as much as you intend to use, in order that there may be room to stir it. You must then add some potash or other alkali by degrees, till, after several trials, you find it does not taste sour, or until the acid is entirely saturated or neutralized. Take of this neutralized liquor enough to dye what goods you require, and put it in a tub of water (about blood warm is generally used) and by dipping a small piece of cotton into it, you may judge of the depth of the colour.

To dye with this *Chymic Vat*, (for so it is called) first wet out your goods in warm water, then immerse them in the dye water, and handle them to the shade required.

Blue, when dyed this way, should be dried in a warm room, and if book muslins, they must be pinned out; if cotton furniture, it must be made stiff with starch, or flour, and glazed, sleeked, mangled, or callendered.

*Remarks on this Dye.*—If the acid of the vitriol is not overcome by the alkali of the pearl or potash, the goods worked in this dye will be rotten; it should rather have a salt than an acid taste, and then you will be sure of its working well, but the nearer you can bring it to a point of neutralization, the better will be the effect.

*To dye a Grey Green Drab on Prince's Cord,  
or Corduroy.*

Boil for one hour, half of a pound of chipped fustic and a quarter of a pound of shumac; in the interim, pour some boiling water on two ounces of shumac, strain this liquor, and put your goods in it for half an hour, then draw them and slightly rince in cold water; after this, dissolve an ounce of alum in hot water; when at a hand heat, enter your goods for twenty minutes, then draw them, and cool down your copper with cold water, slightly rince your goods from the alum liquor, and enter them in the copper, (after first taking out the bag containing the shumac and fustic). The goods must simmer in this liquor for twenty minutes, then draw them from the copper, and they will be of a yellow brown colour; slightly rince them in cold water, and add to the liquor in the copper a table-spoonful of chymic and a small lump of copperas, something less than a quarter of an ounce; suffer this to boil ten minutes, then cool down your copper, and enter your goods, and boil from ten to fifteen minutes; then wash them in cold water, and dry in a warm room. The quantities here specified will serve for two pair of breeches.

Whatever is the cause of the solidity of this colour I cannot immediately account for, but I have known a pair of breeches dyed this way

wear without losing any of their colour for twelve months.

*To dye thick Silks, Satins, Silk Stockings, &c.  
of a Flesh Colour.*

Wash your stockings clean in soap and water, then rince them in hot water; if then they should not appear perfectly clear, cut half an ounce of white soap into thin slices, and put it into a saucepan half full of boiling water; when this soap is dissolved cool the water in the pan, then put in the stockings, and boil them twenty minutes, then take them out, and rince in hot water; in the interim pour three table spoonfuls of purple archil into a wash-hand bason half full of hot water, put the stockings in this dye water, and when of the shade called half violet or lilac, take them from the dye water and slightly rince them in cold water; when dry, hang them in a close room in which sulphur is burnt, (for this process, see page 21); when they are evenly bleached to the shade required of flesh colour, take them from the sulphuring room, and finish them by rubbing the right side with a clean flannel. Some persons callender them afterwards. Satins and silks are done the same way.

*To dye a Buff, inclining to a dull Orange.*

This colour has been much worn of late, and is known to the trade by the name of Indian



buff. There are several ways of dying it; the principal of which may be noted in the three following recipes.

This colour is generally applied upon cotton and silk, either wove together or separate. The first recipe is the most expensive, nor would I recommend it, excepting for a very valuable article, such as an Indian shawl or scarf, and then the dying wares should be first boiled; when they have given their colour to the water, check the boiling, and put in a pattern; in five minutes it will be seen what colour the contents of the copper will afford. If such a colour as is required, then enter your shawl, allowing for what alteration the lime will effect in the saddening.

*For a common Sized Woman's Shawl.*

First clean it in soap and water, then rince in warm water; pour boiling water on half an ounce of turmeric, and stir it well. When this dye liquor is at a hand heat put in the shawl, and handle it over for twenty minutes or half an hour, then take it out, and slightly rince it in cold water; in the interim dissolve a piece of alum as big as a boy's marble or horse-bean in boiling water; when this alum water becomes of a hand heat, put in the shawl, and suffer it to remain half an hour, now and then turning it over, that it may receive the alum regularly; then take it from the alum liquor, and slightly



rinse it in cold water; the shawl will now have imbibed the ground colour, and the mordant of preparation. While this is performing, the dye liquor should be prepared by boiling sufficient water to dye the garment in, to which add from half an ounce to an ounce of fustic, and a drachm of powdered and sifted cochineal; when these dying wares have boiled ten minutes, cool down the copper or boiler by adding cold water, then enter your shawl, and simmer for half an hour; in the interim add a teacup full of lime water to a small pan of cold water, then take the shawl from the copper, rinse it in cold water till it is cold, then immerse it in this lime water, the caustic of which will bring it to the shade required; then rinse in cold water, and dry in a warm room; when dry it may be mangled, but callendering is preferable. Some dyers press the shawls done this way.

The cochineal and fustic liquors should not be emptied or thrown away until it is seen how the shawl dries, as this often requires to be re-entered, and either more cochineal or more fustic added, as required.

I have seen the colour in the foregoing recipe worn much more on the brown cast. This is performed after being dyed as described, by pounding a small dyer's gall, and pouring boiling water on it. This liquor must then remain half an hour to extract the properties of the gall, then

strain it off, and enter the shawl, and handle it over about twenty minutes. It must then be taken out, and a tea spoonful of copperas water added to a pan of cold water, and the shawl entered, which will sadden it to the shade required.

*A much shorter Method than the last, but the Colour is not so fine or bright.*

For a common sized silk shawl, boil for half an hour, from one to two ounces of welds; take this dye liquor and put it in a pan, to which add a quarter of an ounce of alum; when dissolved put in the shawl for half an hour, then draw it, and rince it in cold water; in the mean time dissolve a quarter of an ounce of arnatto, with an ounce of pearl-ash, in a teacup, add this arnatto to a small pan of warm water, then enter the shawl, and keep handling it for half an hour at least; then take it out and pass it through lime water, then back again through the arnatto, and again through the lime water; lastly, rince it in cold water, which finishes it.

Dry in a warm room, and send it to a callenderers.

This colour will wash well if a small quantity of pearl-ash is used with the soap liquor, and it is at last rinsed in pearl-ash and water.

*For dying Indian Buff.*

This colour is dyed by giving the silk or cotton a ground colour of fustic, which colour is saddened with lime; a fresh copper is prepared with old madder liquor, into which the silk is to be dipped now and then. It must afterwards be returned into the fustic liquor, and at last saddened in lime water. It is somewhat singular that it is necessary that lime should be used to bring this colour to that shade of buff. There are other means of procuring this shade, but those already specified are the principal. The precise rules as to the quantity of ingredients cannot be given, but must depend on the judgment of the person performing this process.

*Drabs.*

I have said but little of drab colours; because they depend so much on the judgment of the person dying them, that no precise rules can be given for any particular shade: for, independently of the various shades, which by different persons are called by different names, even were patterns affixed, these would fade in time, and become precarious and uncertain. Sufficient, however, has been said, to inform persons of the meanest capacity how to clean every article of dress, and to dye

many colours to a great degree of perfection. As to performing the various colours here specified, the only difficulty is in getting people to make the attempt; but this once hazarded, they will certainly succeed, and then pleasure and profit will of course attend each other. Drab colours are generally performed by giving the stuffs a strong preparing liquor; secondly, by giving them a slight body, a stuffing liquor, or ground colour; then the shade, whatever it may be, must be ascertained. Supposing it to be of a dull red cast, madder root and walnut root are to be put in a bag and boiled, until they give to the liquor the degree of shade supposed requisite. The goods are then entered and boiled to the colour required. An olive drab requires a strong preparation, and a stuffing of shumac and fustic. It is dyed or turned off by adding a strong decoction of logwood and fustic. If for a grey olive, pearl-ash and copperas are used; but if the shade is to be very delicate, no stuffing is required, but a full body of colour is given of dying wares, and then turned off with spirits, previously having a strong mordant of dying. Archil and bearwood, copperas, blue vitriol, and chymic, are seldom used for drabs, but logwood is one of the principal drugs which are changed bluer by alkalies, and reddened by acids. Shumac is sometimes used, but its colour is somewhat too full; it tends rather to dye shades



of *brown* than drab. The dyer's galls are more frequently used ; they may be said to be a mordant for copperas to run on, and almost any clear colouring body, particularly archil, will turn their colour. These may serve as hints to the dyer, but help him to no certain rule. The mordants generally used are alum and tartar, sometimes white or crude tartar, at other times red tartar : these do well for yellows, reds, and shades from them.

### *Various Colours.*

Roman vitriol and blue vitriol are used for blue and their shades ; copperas for blacks, greys, and their shades ; sometimes different mordants are used together, at other times separately ; but tartar is never used alone, except for dividing the red particles in drabs, and then either in hot or boiled water ; and in altering crimson, scarlet, &c. Alum is used either for saddening scarlet even down to a crimson, or as a preparation for dying crimson ; the effect however of these alkalies, salts, or acids, can only be completely obtained by practice ; theory may afford a general idea of the ingredients that are to be used, but the various ways of performance cannot be fully explained by any recipes, as the goodness of the ingredients alone would make an alteration in some colours. It is necessary for a young artist to consult the compound colours in mix-



ture, and then the effects of salts and acids on these different colours. To try patterns with a small saucepan and a little piece of cloth, first give it the preparation as described in this work, pour this away, and boil your dye stuff according to the different recipes. By this means great practical experience may be gained, which is more easy than people generally imagine, and to an inquisitive mind the art will prove extremely entertaining, though the most persevering will be convinced that one half of the art yet remains in oblivion.

### *Useful Remarks on dying Feathers.*

I beg to refer the reader to the recipes given in this work for dying feathers of various colours, adding, that previous to their being dyed, it is necessary that they should be soaked in warm water for several hours. The same degree of heat should be kept up, but the water must be but little more than blood warm. For reds and yellows, and some drab colours, it will be necessary to use the alum water at the same degree of heat, as its being too hot would injure the feathers. For dying browns, archil, &c. are used instead of woods, barks, &c.; cudbear is also used. After a feather has been dyed any dark brown or other dark colour, its nature is lost, and consequently its texture. It is unprofitable for the wearer to redye them, and difficult even for a dyer

to perform. A feather by being beat across the hand soon dries; by this means feathers are as easily dyed as silk or woollen, and there is a greater certainty of obtaining the desired shade. The only difficulty of dying feathers is in compounding the dying wares, and making a homogeneous liquor of them, that shall give them the desired shade, after being saddened or made of a darker colour by means of copperas, which is generally used to darken brown greys, blacks, slate colours, &c. Shumac and fustic, or shumac alone, is the general ground of browns; the red, as I have before observed, is obtained by archil, and the black hue by copperas in warm water; and after the feather has been put in the copperas water, it may be returned again into the dye water, and back again into the copperas; but care should be taken each time that the feather should be rinsed from the copperas water, before it is again returned into the staining or dye liquor, otherwise the copperas would poison the dye water (as the dyers say) when it would have lost its effect. We also should be taken not to use too much copperas in saddening colours, as it injures the texture, and prevents the colour from appearing right; and if the ground colour is not of a sufficient body, the saddening or copperas will make it uneven.

*Blue on Feathers.*

The finest blues are obtained by means of the silk *blue vat*.

The feathers should be well cleaned in soap and water, then rinsed in warm water. By means of the soap liquors and warm rinsing water, the feather will be sufficiently soft; then it will be necessary to boil as much water as will serve to dye it, unto which add (for one feather) half a teacup full of purple archil; simmer the feather twenty minutes, until the stem and flue is of the full violet colour, then take it out of this dye, and immerse it in the vat. According to the shade required, so deep must be the shade of the violet; a full violet, by remaining in the vat long enough will dye a full blue.

There are various ways of dying blue on feathers, for instance, clean the feathers as described in the preceding recipe, and when your water boils throw in a teaspoonful of tartar, and as much chalk as will dye the desired shade of blue. Cool with the copper by means of cold water, and put in the feathers, and keep the water much below a hand heat, and you will have a blue of the brightest dye, more or less full, but of the false dye.

*Another recipe.*—Use blue vitriol and logwood as before described for silk and woollen, at a blood heat; this also is a false colour, but very bright.

*For Orange, Moidore, &c.*

These colours are very simple, and are produced by arnatto and pearl-ash, which dye the feathers of a buff colour; they are reddened or orange by means of acids, as vinegar, cyder, lemon juice, tartar, and bran water.

Vitriol, &c. is also used, and especially vinegar, being the most simple; copperas is also applied as a corrective: thus arnatto and turmeric are used in dying bright reds and scarlets, as they redden by means of the acid liquor, and at the same time add beauty and fulness to the colour.

*Chocolate, and full rich Browns.*

These are produced by archil, logwood, and shumac, boiled together, and these liquors heated at different times. The feather must be dipped into this as hot as it will bear, without injuring the texture of the feather. Fustic is also used when for chocolate brown, and copperas; and sometimes pearl-ash in the saddening.

*Remarks on Dyes in general.*

When a copper is made up, that is, when the dying wares have yielded their colour to the water, whether these are archil, cudbear, logwood, or some other dying wares, that are acted on by alkalies, and the liquor wants blueing or saddening, pearl-ash will have the proper effect, and it



may be used even in the same vat with copperas. It is of essential service to know this in dying puce colours, either on silk, woollen, or feathers. It brightens when too much is not used, by bringing out the blue which the logwood affords, on the surface of the cloth, and it unites with the alkali used in the manufacturing of archil; it also has as good an effect on cudbear, and some kinds of red woods. Persons who are wholly ignorant of the Art of Chemistry, will be surprised to find, that by means sometimes of a small quantity of lime water, sulphuric acid, the marine or nitric acid, or alum, that in an instant the colour in the copper will be entirely changed. Supposing this change to have been effected by means of an alkali, by adding to the same copper a sufficient quantity of acid, to satiate the salt, the colour may be again restored. These changes may be effected several times, till the two opposites form or become masticated, which will be the case when certain parts called the spirit or strength are lost.

*Of dying Black, on Silk, Cotton, or Woollen.*

The effect of salts (mordants) whether alkali or acid, or of a neutral quality, are particularly to be noted in dying blacks. Some authors have assigned one reason for this, while others again have differed from them; but practice tells me, if a black is rusty when dry, it must be so from its not hav-



ing had a colouring body sufficient to cover the stuffing or ground colour, and from these not having a sufficient quantity of the alkali, say, pearl-ash, or the salt of urine, to give that blue lustre a force which these salts effect. The argil, I consider, acts upon the iron of the copperas, and prevents it from rusting, which it does on exposure to the air. Blue vitriol is also used in dying black, and is a great acquisition in the working, as it tends to draw on the wares, as well as to make them assume the blue cast.

### *Of Reds in general.*

Reds are dyed with various ingredients, almost the whole of which are acted upon by means of acid. The wares, or their juices, are not always affected by it; but by the action of the spirit it tends to clear the fulness the substance has imbibed, therefore, the goods when finished, appear more bright. It divides also the colouring atoms. Independently of this, when any calx or mineral substance of a light body is dissolved in spirit, as tin is in the nitric acid, this enters the pores of the substance, and unites with the finer atoms that the drugs afford, which is reflected very transparently through the fibres of the substance dyed. Whether the use of dissolved metals in dying was found out by a profound student, uniting in one person a chemist and a dyer, or whether discovered by chance, the dyer would have a right to

the honour of having found out the most consummate part of his art; the chemist could only claim an honour which chance had thrown in his way.

In reverting to black, that some authors have thought so much of, little merit is to be attributed to chemists; for if they knew the effect of mordants, which is only knowing the basis of their profession, there can be no difficulty left. Some eminent dyers of wool, actually use grease with their other dying wares. I asked its use of one of the journeymen. I was answered it made the cloth of a beautiful black; but I hope my readers will not follow this method, as it is not dictated by reason. Some goods for the East India Company, are, I am informed, dyed in this way, the ill effects of which are obvious. I recommend in dying blacks and browns, that copperas should be used with a very sparing hand.

### *Of Yellows.*

Yellows are acted upon by means of spirits to clear them, as is likewise some dissolved metal, especially tin. In many experiments I have tried, I have found it to add a brightness to the colour, given either by fustic, welds, or quercitron bark.

The arnatto, turmeric, and those prepared mucilaginous drugs, are acted upon by alkalies, which dissolve their resinous feculæ, and render

it quite soluble. Alkalies also tend to clear and brighten the colours in the copper.

### *Browns*

Are acted upon by means of acids, and brightened also by means of neutrals, as limes, chalk, &c. Argil, tartar, &c. are used to divide the more gross particles and atoms of the brown dying wares, and have a powerful effect on copperas.

### *Further Remarks on Blue.*

Most blue dying wares are acted upon by alkalies; the indigoes, particularly, are saddened by them; the logwood, the woad, &c. In fact, all vegetables, affording a blue colour, are acted on by salts; and various proportions make various shades.

It is needless to say more of the compound colours, such as greens, purples, and the like, as their single effects have been already explained.

### *To clean Orange Colour on Silk, Cotton, and Woollen.*

If it is a silk garment, it must be cleaned with a solution of soap, no matter what sort, and in the second liquor pearl-ash must be used to stay the colour. The water must be used much under a hand heat for silks. If requiring more to scarlet, or redder, than pearl-ash must be omitted, and a

little vinegar used in the rincing water. See the mode of cleaning of coloured woollens in the preceding pages, recollecting that acids heighten the red colour, and alkalies make it more upon the buff.

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### ERRATA AND ADDENDA.

- Page 25, line 9 from top, *for* pearl-ash, *read* pot-ash liquor.  
 — 29, — 16, *for* argil tartar, *read* argil copperas tartar.  
 — 35, — 3, *for* whitening Cottons, *read* whitening Cottons and Woollens.  
 — 38, — 4 from bottom, *for* English method, *read* an Indigo Blue Vat, English method.  
 — 50, — 5 from bottom, *add*, it is sometimes necessary to use pearl-ash in the saddening.  
 — 70, — 7 from top, *for* boiled, *read* simmered.  
 — 89, — 14, *after* Blue Vat, *read* pass through shumac-water, and sadden in copperas.  
 [— 125, — 11, *for* seventy-four pounds, *read* one quarter of a pound.  
 — 131, — 16, *for* archil, *read* argil.



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